THE EMERGENCE OF GENDER DIFFERENCES IN DEPRESSION

A thesis

submitted in partial fulfilment

of the requirements for the Degree

of

MASTER OF ARTS IN PSYCHOLOGY

in the

University of Canterbury

by

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University of Canterbury

1996

ACKNOWLEDGEMENTS

Many people have contributed to this thesis with their support, practical help and discussion. There are some, however, who I would particularly like to thank. Bill, who as always, provided practical assistance, support and encouragement. Cindy for her expert knowledge, supervision and assistance. My family for their continued love and support, with particular thanks to Jacqui for the editing. My friends and colleagues whose encouragement has been greatly appreciated. Brooke and Boswell who provided me with welcome distractions during the writing of this thesis.

CONTENTS

SECTION 3: EPIDEMIOLOGY

SECTION 4; GENDER DIFFERENCES IN DEPRESSION IN CHILDREN AND ADOLESCENTS

List Of Tables

TABLES:

ABSTRACT

One of the most consistent and robust findings in the literature on depression is that after early adolescence, females are approximately twice as likely to be depressed as males. This gender difference in rates of depression is not apparent among preadolescent children. Three main models have been proposed to account for the emergence of gender differences in depression. Model 1 posits that the risk factors associated with depression are the same for males and females and these risk factors become more prevalent in females at early adolescence. Model 2 proposes that the risk factors associated with depression are different for males and females and that only the risk factors associated with depression in females increase at early adolescence. Finally, model 3 proposes that the risk factors associated with depression are the same for males and females, however, preadolescent females are more likely to carry the risk factors associated with depression. It is not until these risk factors interact with the challenges of early adolescence that the gender difference in depression emerges. To date no studies have been conducted to specifically test each of these models, rather, researchers have focused on examining specific variables, thought to be associated with the emergence of gender differences in depression. In this thesis a detailed and critical examination of this research is conducted and each of the three models are evaluated to determine how well they account for the research findings. Definitional, conceptual and methodological issues confronting researchers in this area are also addressed and the epidemiological research on depression in children and adolescents is critically reviewed. It is concluded that model 3 provides a better account of the research to date and is a more fruitful theoretical framework for further investigation of the emergence of gender differences in the depression.

SECTION 1

THE EMERGENCE OF GENDER DIFFERENCES IN DEPRESSION; INTRODUCTION AND METHOD

CHAPTER 1

INTRODUCTION

One of the most striking and robust findings in the research literature on depression is that females are twice as likely as males to become depressed. Interestingly, this gender difference is thought to emerge sometime around early adolescence and continue well into adulthood. Epidemiological studies indicate that, in preadolescents, either more boys than girls are depressed, or the ratio is equal. Gender differences in the prevalence of depression both stimulates and invites explanation. If the emergence of gender differences in depressive symptoms at adolescence can be understood, perhaps it can be prevented. Moreover, it is likely that a greater understanding of why gender differences in depression emerge, would also provide a major contribution to our understanding of depression in general, and possibly, many other mental disorders.

Several theories have been posited to account for preadolescent male's vulnerability to depression. It has been hypothesised, for example, that this vulnerability is due to either a biological predisposition which accounts for both their physical and psychological vulnerabilities, relative to females. It has also been suggested that males have a more irritable temperament and that they are more reactive to environmental stressors than females, which leaves them more vulnerable to depression. Other researchers have suggested that adults have a lower tolerance of deviance in females, than males. Thus parents are more likely to bring their sons, as opposed to their daughters, psychopathology to the attention of a professional. Finally, it has been hypothesised that parents put more pressure on sons than daughters to achieve and to be assertive, while at the same time punishing boys for overstepping boundaries. Is is thought that this creates stress for males which accounts for their increased vulnerability to depression.

Three main models have been proposed to account for the predominance of depressed females, relative to males, at adolescence. The first model posits that the same factors cause depression in both males and females. These risk factors are thought to be equivalent during preadolescence but become more common in females at adolescence. Model 2 proposes that the risk factors which lead to depression in males and females, although equivalent, are different in preadolescence. In early

adolescence, however, the risk factors for females increase, relative to males. Finally, model 3 suggests that prior to adolescence, females are more likely than males to have characteristics which put them at risk for depression. It is not until these characteristics interact with the challenges of early adolescence, that females develop increased depression, compared to males.

Although these explanations have been proposed to account for gender differences in depression in children and adolescents, few studies have been conducted to explicitly test them. Rather, most researchers appear to be more concerned with documenting associations between specific variables and gender differences in depression, than testing hypothesis about how, or why such gender differences occur. The absence of a strong theoretical framework to guide research has resulted in the work in this area being unfocused, fragmented and largely incomparable. Previous reviews of these explanations have typically focused on adult populations and/or have been fairly brief and relatively uncritical (Nolen-Hoeksema, 1987; Nolen-Hoeksema & Girgus, 1994; Peterson, Sarigiani, & Kennedy, 1991).

The purpose of this thesis is to summarise and critically appraise the relevant empirical research to date, examining gender differences in depression, in both children and adolescents. It is also a central goal of this thesis to discuss and evaluate how adequately each of the proposed theories and models, accounts for the research findings. As Shaw (1989) has so poignantly noted "for our field and profession to develop, it is essential that our theories evolve, and criticism of these theories is an important precipitant of this evolution". An adequate theory of gender differences in depression should be able to account for the association between gender and depression across the life span. A further aim of this thesis is to provide a critical review of the methodological considerations and problems in the research in this area. Gaps and deficiencies in our knowledge will be highlighted and fruitful directions for future research, examining the emergence of gender differences in depression, will be suggested.

CHAPTER 2

METHOD

1. SEARCH

In order to gather relevant articles for this thesis a comprehensive search of the computerised Psychological Literature data base (PsycLit) from 1974 through to 1995 and Med Line 1976 through to 1995, was conducted. Both of these databases were continually searched so as to include pertinent studies which may have been published since the last database search. This continued up until the final month of the thesis going to print. An On Line Public Acess Catalogue (OPAC) search was also conducted to search for relevant books on the topic, using key words in title, subject and author. A snowball technique was also used to obtain other relevant material referred to in other articles and books.

2. CRITERIA FOR INCLUSION OF STUDIES

All studies which were identified as relevant to the thesis topic, according to the key words in the title, abstract, index or author, were obtained. All articles which specifically examined gender differences in depression in children and adolescents were included in the thesis. Similarly, all studies that did not specifically examine gender differences, but included a gender analysis within a wider study of child or adolescent depression, were included. A number of other articles relevant to the investigation of gender differences in childhood and adolescent depression were also referred to. These included articles on topics such as assessment, classification, developmental issues, comorbidity and etiology.

3. AGE GROUP DIVISION

The dividing point between childhood and adolescence was chosen to be between the ages of 11 to 12 years because this is the appropriate age boundary between concrete and formal operational thinking (Piaget, 1954)

and because this is the age at which changes associated with puberty begin for many children (Weiss & Weisz, 1988). Although, it has been suggested that adolescence extends from 11 to 21 years, it was decided that the cut-off point for adolescence would be 17 years. This was decided because the majority of studies discussing individuals older than 17 years tend to subsume them in with adult subjects, rather than younger adolescents. Chronological age was used to distinguish children from adolescents as opposed to school class or grade, as grade systems vary considerably within, and across countries. As a consequence, it was thought that grouping studies according to age would be a more accurate method for evaluating and comparing studies. It is acknowledged that there may be marked developmental and maturational differences among young people of the same age, however, the research to date does not take account of this factor.

4. TECHNIQUE FOR DISCUSSION OF RESEARCH

Studies were grouped and then discussed according to whether they referred to children or adolescents, community or clinical samples, or depressive affect, symptoms or disorders. All discussions of gender differences in depression in children and adolescents in the literature have been confined to unipolar depression, as has this thesis. It has generally been assumed that there are no gender differences in bipolar depression.

Articles which specifically investigated gender differences and depression, or included a gender analysis within a wider study, have been discussed in considerable detail, so as to enable a full understanding, summary and critical analyses of research designs, measurement instruments, variables analysed, statistical analyses utilised and conclusions reached. Other relevant studies, which do not include a gender analysis, or do not specifically examine depression in children and adolescents, but still provide additional information which may be pertinent to gender differences in depression have been discussed more briefly. Although a critical analyses of these latter studies is also important they represent an enormous body of literature and, as such, a detailed discussion and critical analyses of each study is beyond the scope and focus of the thesis presented here.

SECTION 2

GENDER DIFFERENCES IN DEPRESSION IN CHILDREN AND ADOLESCENTS: CONCEPTUAL AND DEFINITIONAL ISSUES

There are a number of conceptual and definitional issues which need to be considered when examining the literature on gender differences in childhood and adolescent depression. These include; (1) whether the symptoms of depression are the same in children, adolescents and adults; (2) whether there are developmental and gender differences in the expression of depressive symptomatology; (3) whether mild and moderate depression is on a continuum with severe depression, i.e. is there a qualitative or quantitative difference between depressive symptomatology and depressive disorders; (4), how best to determine, or assess, if a child or adolescent is depressed. Each of these points will be discussed in more detail in the following section.

CHAPTER 3

HISTORICAL REVIEW OF DEPRESSION IN INFANCY, CHILDHOOD AND ADOLESCENCE

1. INTRODUCTION

The issue of whether depression exists in children and adolescents has generated considerable debate and theorising in the literature over the years. Until recently, it was thought that depression was extremely rare before adolescence. This factor accounts for the paucity of research on child and adolescent depression relative to adult depression. The following section includes a brief, historical review of the perspectives which have been held in regard to depression in infancy, childhood and adolescence. Following this is a review of developmental issues and a detailed examination of gender differences in the experience and expression of depressive symptoms in young people.

2. INFANCY

Although thought to be extremely rare or possibly non-existent in infancy, a number of depressive syndromes have been identified which appear to be similar to that observed in adults including anaclitic depression, conservation-withdrawal reaction and failure to thrive (Spitz, 1946; Engel & Reichsman, 1956, cited in Garber, 1984). Anaclitic depression, which has been described as the infant's response to separation from the mother, is characterised by 3 phases; protest, rejection, and withdrawal (Spitz 1946, cited in Garber, 1984). The symptomatology of anaclitic depression, which is thought to be similar to that experienced by adults, includes listlessness, apathy, minimal movement, loss of weight and sleep disturbance. There has been considerable debate in regard to the relation of these early syndromes to later depressive episodes, i.e. it is not clear whether similar symptoms and behaviours have the same meaning at different ages. Overall, as Garber (1984) notes there appears to be a syndrome in infancy that resembles adult depression with respect to many of the vegetative and behavioural symptoms. Whether to conceptualise these responses as

'depression' in the sense of a depressive disorder remains a subject of considerable debate (Schachter & Romano, 1993).

3. CHILDHOOD

Until recently it was thought that depression did not exist in children. Psychoanalytic theorists, for example, argued that children did not have an adequately developed superego to direct aggression toward the ego (Rochlin 1959, cited in Cantwell & Carlson, 1983) or because children do not have a sufficiently stable self-representation to suffer loss of self-esteem in the face of a diminished ego ideal (Rie 1966, cited in Cantwell & Carlson, 1983). Other theorists have suggested that the putative symptoms of depression observed clinically in pre-school children were merely transitory developmental phenomena that dissipated as a function of time (Lefkowitz & Burton, 1978). A challenge to these views has come from those who proposed that rather than being demonstrated in a clinically obvious way depression in children and adolescents was "masked" (Glaser 1967, cited in Garber, 1984). Cytryn & McKnew (1972) have suggested that 'masked depressive reaction' is the most common form of depression in children and that depressive mood and behaviour are rare. Thus proponents of this theory while acknowledging that depressive feelings exist in children suggest that the manifestation of these feelings in children is qualitatively different to that expressed by adults.

4. ADOLESCENCE

Unlike earlier developmental periods there has been a general consensus in the literature that adolescents could be depressed. Psychoanalytic theorists, for example, posited that depression could occur at adolesence as this was when the psychic structures developed, even then, however, depression was thought to be relatively rare (Angold, 1988b). In general there was agreement that depression in adolescents was typically similar to that experienced in adulthood.

By the end of the 1960s, a number of researchers were documenting the presence of marked levels of 'depressive' symptoms in clinically referred young people (see Angold, 1988b). This led to a general consensus that if depressive symptoms in children and adolescents resembled the depressive

symptoms of adults, then the same diagnostic criteria used to diagnose depression in adults could be used to diagnose depression in young people. The current Diagnostic and Statistical Manual of Mental Disorders (DSM-IV; American Psychatric Association, 1994) diagnostic criteria reflect this view in that there is no separate criteria for diagnosing child and adolescent depression. Rather the same criteria are used for children, adolescents and adults with specific criteria added for children.

In summary, although the literature is marked by significant debate in regard to the existence of depression in children, in recent years there has been a growing consensus that depression in school-age children is qualitatively similar to that experienced by adults. There is however, substantially less agreement in regard to the existence of depression in infancy.

CHAPTER 4

DEVELOPMENTAL ISSUES IN CHILD AND ADOLESCENT DEPRESSION

1. INTRODUCTION

The view that childhood, adolescent and adult forms of depressive disorders are isomorphic and can be diagnosed with the same criteria as that used with adults, has not gone unchallenged. A number of researchers have criticised this approach for not taking sufficient account of developmental issues (e.g. Cicchetti & Schneider-Rosen, 1986; Sroufe & Rutter, 1984). It is argued that developmental changes in affective, cognitive, biochemical, motoric and other systems are likely to have a marked impact on the manifestation of depressive symptoms from infancy through to adulthood. Thus it is extremely important to consider the depressed child or adolescent within a developmental framework, not only in regard to depression in general but also to distinguish developmental differences from gender differences in depression. As Garber (1984) has noted, in regard to the developmental perspective on the classification of depression in young people, researchers need to;

(1) determine whether the expression of depressive symptoms varies with development, (2) identifiy additional age-appropriate symptoms and areas of dysfunction to be included in the diagnostic process, and (3) assess the influence of children's cognitive, affective, and social competencies and their physiological maturation on the experience and the expression of depressive symptoms.

To date there have been no comprehensive studies which have investigated the symptomatology of depressive symptoms or disorders across the childhood, adolescent and adult age range. What is known about the similarities and differences between depression in these age groups has been inferred by comparing the literature on depressed adults to that of adolescents and/or children. Cantwell & Baker (1991) have noted that such methodology is inherently weak since the different studies usually employ different criteria, different raters and different types of samples. Despite

these problems there are some consistent findings in the literature which suggest that there may well be developmental differences in depression which need to be considered in assessment and current nosologies. The goal of this section is to provide a brief review of relevant studies investigating developmental differences in depression. The literature in this area typically discusses results as they relate to the pre-school, school and adolescent age groups, consequently, this arrangement has been repeated here. In addition, the studies in this section have been grouped according to whether they have utilised clinical versus non-clinical samples and also according to whether they have investigated depressive symptoms or depressive disorders.

2. PRE-SCHOOL

As there have been few systematic studies of depression in the pre-schooler, little is known about the symptoms of depression during the pre-school years. This appears to be largely a consequence of the controversy as to the existence of depression in pre-school children and to the inherent difficulties of assessing, measuring and diagnosing depression in this age group.

(1) Non-Clinical Samples And Depressive Symptoms.

Garber (1984) notes that studies investigating depressive symptoms in pre-school children have indicated that such symptoms include brief periods of sadness, weepiness, loss of interest in activities, feeling rejected, physical complaints and temper tantrums. Similarly, Schachter & Romano (1993) note that overall, depressed pre-schoolers have been described as manifesting mood disturbance, vegetative symptoms and behaviour disturbance. Ushakov & Girich (1972, cited in Schachter & Romano, 1993) for example, have reported on depressive symptoms of 12 children under the age of 7 years. Ushakov et al (1972) reported that, in contrast to school children, anxiety was a more common feature. They noted that while the depressed children were frequently more tearful, appeared sad and sluggish in their movements, no specific clinical picture was evident. Psychomotor symptoms were the least stable with a tendency to find an increase in restlessness and fidgety behaviour toward the evening.

(2) Non-Clinical Samples And Depressive Disorders.

Kashani & Ray (1983) were among the first to survey systematically depressive symptoms, using the DSM-III (American Psychatric Association, 1980) criteria, in a non-clinical sample of 241, 2 to 6 year olds. They found depressive symptoms such as sleep disturbance, appetite disturbance, agitation or hyperactivity. There was no evidence of anhedonia or feelings of worthlessness in this age group. No children were found with depressive symptoms which met the DSM-III criteria for Major Depressive Disorder (MDD), however, the findings of this study need to interpreted with caution as depression was assessed with only one measure. Moreover, this measure was a parental questionnaire, as opposed to self-report.

(3) Clinical Samples And Depressive Symptoms.

In a study of 1000, 1 to 9 year old children referred to a child development unit, Kashani & Carlson (1987) reported that depressed children were distinguishable from control children by sadness, appetite loss, sleep changes, fatigue and somatic complaints. The latter, which occurred in all pre-school children, decreased with age. In contrast, neither psychomotor agitation nor distractibility distinguished the depressed group. This suggests that younger children are more likely to express depression with physical symptoms. Only nine of the children were diagnosed with major depression, indicating that even in a clinical population of pre-schoolers depression appears to be rare. Interestingly, all of these depressed children had a history of parental abuse or neglect.

No studies were found in the literature search for this thesis which investigated developmental differences in depressive disorders in a clinical sample.

Garber (1984) notes, that in general, depressive symptoms in pre-school children tend to be transient and it is rare to see a cluster of symptoms appearing in the same child for a sustained length of time. Bemporad & Wilson (1978, cited in Garber, 1984)) have suggested that the transient nature of depressive symptoms in children is due to their tendency to live in the moment, their inability to generalise from one experience to another and their limited sense of past and future. Thus the depressive symptomatology of this preoperational stage is likely to differ significantly from the more cognitively and affectually mature child.

3. SCHOOL-AGE YEARS; CHILDREN AND ADOLESCENTS

The majority of research on childhood depression has focused on school-age children and adolescents. As discussed earlier the consensus is that depression during middle childhood and adolescence parallels that of adulthood, except for some age-related/developmental differences. A few studies have attempted to investigate the quantity and quality of these developmental differences and issues.

(1) Non-Clinical Samples And Depressive Symptoms.

Worchel, Nolan, & Wilson (1987) for example, investigated depression in a normal school population and found no age differences for the total CDI scores, however they reported that younger children (6-11) endorsed four items significantly more often than did adolescents; worrying about bad things happening, lack of appetite, worrying about aches and pains, and wanting more friends. Only one item was endorsed more often by adolescents than by children which was having to push oneself to do schoolwork. Donnelly & Wilson (1994) conducted a factor analytical study of 887, 11-15 years school student's scores on the CDI. These researchers reported that items depicting somatic symptoms and guilt were found to be the weakest factors, thereby suggesting that although prevalent in adult depression, these symptoms may not be as predominant in adolescent depression. Ushakov et al (1972; discussed previously) compared children in the 7 to 10 year old age group with children under 7 and reported that in the older age group; (1) depressive symptoms were more persistent; (2) feelings of sadness were recognised and expressed rather than simply manifested in their behaviours; (3) anxiety was experienced substantially less often than younger children; (4) suicidal ideation was more predominant. In the older group of adolescents (11 through to 13 years old) depressive symptoms were more fully expressed and prominent. These older adolescents also exhibited greater awareness of their depression and its cause. Among 14-17 year old Ushakov and Girich (1972) reported that approximately one-third of the adolescent depression was similar to that seen in adults. They noted that there was melancholy, motor and intellectual inhibition and increase rate of suicidal ideation and suicide attempts.

(2) Clinical Samples And Depressive Symptoms.

Garber (1984) conducted a study with 137 clinically referred girls between the ages of 7 and 13 years. Depression was measured with the CDI, the Parent Form of the Children's Depression Inventory (P-CDI; Garber, 1983) and the Children's Depression Rating Scale (CDRS; Poznanski, Cook, & Carroll, 1979). Garber et al (1984) reported that as age increased there was also an increase in the frequency of depressive syndrome and also in some of the depressive symptoms. The symptoms that tended to increase as a function of age were appetite disturbance, hypoactivity, loss of interest, guilt, hopelessness, irritability, fatigue, problems at school, difficulty concentrating, depressed feelings and low self-esteem. Symptoms that tended to decrease with age included morbid ideation and crying. Garber et al (1984) concluded that childhood depression, at least in girls, appears to consist of three meaningful factors including affective, activity and sleep/somatic symptoms, all of which appear to increase as a function of age. A similar study needs to address the developmental progression of depression in boys.

(3) Clinical Samples And Depressive Disorders.

Ryan, Puig-Antich, Ambrosini, Rabinovich, Robinson, Nelson et al (1987) compared symptom frequency and severity between children and adolescents (clinically referred; aged 6 to 18 years) who met the Research Diagnostic Criteria for major depressive disorder (MDD). Ryan et al (1987) reported that there were no significant differences between the two groups in the majority of depressive symptoms. Prepubertal children however, had greater depressed appearance, somatic complaints, psychomotor agitation, separation anxiety, phobias, and hallucinations, whereas adolescents, had greater anhedonia, hopelessness, hypersomnia, weight change, use of alcohol and illicit drugs and lethality of suicide. Ryan et al (1987) concluded that the similarities across school age children in the phenomenology of MDD far outweigh the few differences and that developmental differences only had a mild to moderate effect on the expression of a limited number of symptoms in children.

Carlson & Kashani (1988) compared the frequency of depressive symptoms in clinically referred pre-schoolers (N=9), prepubertal children (N=95), adolescents (N= 92) and adults (N-100) from three studies. Individuals included in the studies meet RDC criteria for major depression. They reported that symptoms of depressed mood, diminished

concentration, insomnia and suicidal ideation occurred with similar frequencies across the developmental span. Anhedonia, diurnal variation, hopelessness, psychomotor retardation and delusions increased with age whereas, depressed appearance, low self esteem, and somatic complaints decreased with age. Although there were a number of methodological similarities in the three studies the results of Carlson et al (1988) study need to be interpreted with caution as each of the studies were carried out by different researchers, at different sites and on different populations over a 15-year time period.

Mitchell, McCauley, Burke, & Moss (1988) used the K-SADS to compare the depressive symptoms of a clinical population of 45 children and 50 adolescents given a diagnoses of Major Depression. Depressed children and adolescents did not differ substantially from each other in their symptom presentation. Only one symptom, hypersomnia, was significantly more common in adolescence. Similarly, Kovacs & Gatsonis (1989) also found that hypersomnia was the only symptom that distinguished depression children (aged 8-11) from adolescents (12-16), in that adolescents were more than seven times as likely to experience hypersomnia than children. Mitchell et al (1988) reported that there were some differences between depressed children and adults with adults reporting more endogenous symptoms, such as terminal insomnia, early morning depression, anorexia and weight loss.

Angold, Weissman, John, Merikangas, Prusoff, Wickramaratne et al (1987) administered the K-SADS-E psychiatric interview to children who were at low and high familial risk of depression who met Part A DSM-III (1980) criteria for Major Depressive Disorder. Their results were based on the report of 89 children who met the criteria and 62 parents who said that their children meet this criteria. They reported that episodes of depressed mood or anhedonia, occurring in older girls, were also marked by considerable sleep and appetite disturbance and an increase in cognitive symptoms, concentration problems and suicidality than occurring in younger girls and boys of all ages. They found no changes in the rates of symptoms defining melancholia and no age effects appeared in either the reports of boys or the parents reports about boys or girls.

A number of problems arise in attempting to compare these studies. The subjects in Ryan et al's study had been referred to a specialist child and adolescent depression clinic and thus, were highly selected for the severity

of depression. In contrast, Angold et al's subjects were selected on the basis of their parents mental health status, rather than on the basis of their own symptomatology. In addition, Ryan et al also combined data for males and females which may have obscured any age trends. Both Ryan et al and Mitchell et al had the same individual interview the parent and child, and then reconciled disagreements between the interviewees (i.e. parent & child). Summary ratings were made following this. A consequence of this method of combining parent and child data could be that age or developmental differences specific to self-report data may have been obscured. Note that Angold et al found no age effects in parent reports of their child's depressive symptomatology, however, studies relying on self-reports have found age effects.

In addition to clinical descriptions adolescent depression, there are also physiological studies which suggest that the same biological mechanisms account for depressive disorders in adolescents and adults (Puig-Antich, 1985) however, early onset of depression may reflect a more severe form of depressive disorder (Rohde, Lewinsohn, & Seeley, 1994). There are studies, for example, demonstrating similarities between the abnormalities in sleep architecture of depressed adolescents and depressed adults. Likewise, the research on endocrine markers suggests suppression of dexamethasone (DST) is similar between depressed adults and depressed adolescents, although DST in adolescents is more variable (Puig-Antich, 1985). These biological similarities have not been found in prepubertal children and appear to only become evident around late adolescence, thereby suggesting maturational processes may play an important role. It is possible for example, that abnormalities in sleep architecture and DST may reflect maturational changes in neurotransmitter systems (Puig-Antich, 1986).

4. COMORBIDITY

Studies of depression in children and adolescents have indicated that comorbidity is the rule, rather than the exception, in regard to depression. Kovacs, Feinberg, Crouse-Novak, Paulauskas, & Finkelstein (1984a) for example, has reported finding elevated levels of anxiety, phobias, school refusal and conduct disorders in children with depressive symptoms. Puig-Antich & Rabinovich (1986) conducted a study with 80 children with major depressive disorder and reported that 59% of the children had comorbid diagnoses of separation anxiety disorder and 48% had coexisting phobias.

Similarly, Angold & Worthman (1993) reviewed a number of epidemiological studies using standardised interviews and DSM-III or DSM-III-R criteria. They reported finding a high rate of comorbidity in children and adolescents with major depressive disorders or dysthymia. More specifically, they reported that comorbidity with conduct disorder/oppositional defiant disorder ranged from 21% to 83%. Comorbidity with anxiety disorders ranged from 30% to 75% and comorbidity with attention deficit disorders ranged from 0% to 57%. They noted that the rates of depressive comorbidity found in community samples was similar to the rates found in clinical samples. Clearly, to have an understanding of the developmental progression of depression, it is also important to establish how patterns of comorbidity develop over time and how they may influence the clinical presentation of depressed children and adolescents.

5. SUMMARY

This brief review has been an attempt to highlight the developmental differences of depression in children, adolescents and adults. In general, the literature suggests that the characteristics of depression and its associated features are not identical across the developmental spectrum. Although few now doubt the existence of depression in pre-school children relatively little is known about the nature of depression before age 7 years. After the age 6 or 7 years there appears to be a trend toward decreasing diffuseness of the clinical picture and increasing similarity to the adult syndrome. These developmental changes parallel the child's developing cognitive, linguistic, affective, motoric and social developmental. By adolescence depression is typically characterised by symptomatology very similar to that experienced by adults. The need to consider developmental differences in depressive symptomatology is also reinforced by the results of sleep studies with children which suggest that sleep architecture disturbances only emerge in relation to depression in later adolescence (Puig-Antich, 1986).

Due to the paucity of research on depression in pre-school children only tentative remarks can be made concerning developmental aspects of depressive symptomatology in this age group. In non-clinical samples of pre-school children depressive symptoms which appear to be salient are sadness, weepiness, loss of interest, temper tantrums and physical complaints. Overall, however, no firm clinical picture is apparent. In

clinical samples of pre-schoolers with depressive disorders, sleep disturbance, appetite disturbance and agitation or hyperactivity are common. There has been no evidence of anhedonia, worthlessness or guilt in this age group. Somatic symptoms, sleep disturbance, fatigue, sadness, appetite disturbance appear to be common depressive symptoms in clinical samples of depressed pre-schoolers. Overall, depressive symptomatology in pre-schoolers appears to be rare and if manifest, is often transient.

There are a number of consistent developmental differences in specific depressive symptoms between older children, adolescents and adults which emerge from the literature. Non-clinical samples of young children with depressive symptoms suggest they worry more and experience appetite disturbance more often than their adolescent counterparts. Adolescents with depressive symptoms appear to have less motivation than children, have more persistent depressive symptoms, exhibit less physical and more verbal expression of depressive symptoms and express more suicidal ideation. In clinical samples of children and adolescents with depressive symptoms there is evidence that appetite disturbance, hypoactivity, anhedonia, diurnal variation, guilt, hopelessness, irritability, fatigue, school problems, difficulty concentrating, delusions, psychomotor retardation, depressive feelings and low self-esteem, increase with age. In contrast, depressed appearance, low self esteem, and somatic complaints appear to decrease with age. Hypersomnia and suicidal ideation are more common in adolescents with depressive disorders than in their adult counterparts. In regard to depressive disorders, it appears that depressed children and adolescents, unlike depressed adults, rarely present a pure clinical picture. Rather depressive illnesses are commonly comorbid with symptoms of anxiety (including phobias), attention deficits and oppositional and/or conduct disorders.

There is considerable controversy in regard to the meaning of these age-related differences in depression. The debate is centred around the question of whether depression is simply rare in young children, or, is depression expressed in a different form over the course of development. As there are vast developmental differences in the areas of motor skills, verbal and non-verbal cognition and affect in children, adolescents and adults it is not surprising that there are differences in depressive symptomatology across these groups. Symptoms such as guilt and hopelessness which require a high level of cognitive functioning are examples of symptoms which are only evident in older children. Thus the

manifestation of depressive symptomatology is determined by parallel developments in biological processes, affective development, cognitive level and language acquisition.

Considering depressive symptomatology in the context of normal developmental progression enables predictions to be made about what symptoms are likely to emerge at different ages. Thus, an infant may fail to thrive, a toddler may display temper tantrums, a pre-schooler may be overly aggressive or withdrawn, a school child may exhibit anxiety or avoid school and an adolescent may refuse to eat. As Formanek & Gurian (1987) notes if manifestations of depression vary according to developmental level, then the extension of adult nosology and adult explanations of depression may not be useful for depression in children and adolescents. Although there is substantial evidence that there are similarities between adult and childhood depression this view does not take into account the fact there are specific features for different ages and developmental levels. One consequence of applying adult criteria to children and adolesecents is that developmental differences in the expression of depressive symptoms come to be regarded as 'masked' depression. This perspective, however, does not give sufficient acknowledgement to the view that adult nosology is not appropriate for young people. As Angold & Worthman (1993) note if the base rates of individual symptoms in the population change both with age and in relation to each other, then their relative weights in contributing to the diagnosis of depression may also change.

A developmental perspective does not necessarily argue for the abandonment of diagnosis such as the DSM-IV but suggests that classification systems be augmented by identifying additional developmental or age-specific manifestations of syndromes. In addition, other age-inappropriate symptoms need to be eliminated, existing definitions of symptoms need to be broadened to encompass developmental differences in phenomenology and new categories of functioning such as levels of adaptation and competence need to be incorporated in to the diagnostic process (Garber, 1984). Clearly this is no easy task and caution needs to be exercised so that depression does not become a catch-all diagnosis. As Garber et al (1984) has so appropriately mentioned it would be as much a mistake as the premature adoption of unmodified, non-developmental diagnosis.

6. METHODOLOGICAL PROBLEMS

Attention to a number of methodological problems in the developmental literature would assist in the accumulation of reliable and valid information on the developmental progression of depressive symptoms.

- The majority of studies in this area do not report the severity of depression in their sample and/or group individuals together with varying levels of depression. This obscures any relation between severity of depression and developmental expression. Moreover, this practice makes comparisons across studies difficult.

- In general, the measurement of depressive symptomatology in young children is based on parent report, rather than self-report. The literature on assessment of childhood depression indicates that it was important to directly interview the child or adolescent as considerable pertinent information could be gained (Kovacs, 1986).

- Many of the studies in this area employ samples which are too small to produce reliable results in regard to developmental differences in the expression of depression.

- The majority of studies in this area examine developmental issues with cross-sectional designs which investigate age differences in different children, rather than longitudinal differences among the same children, consequently they do not represent the developmental course of depressive symptomatology. Such methodological problems do not rule out, conclusively, the possibility that developmental differences in depressive symptoms are artifacts of research methodology, rather than true age effects.

- A significant deficiency in the research in this area is, in referring to, and studying developmental differences only in terms of chronological age of the child or adolescent. Kazdin (1981b) suggest that further work is needed which examines depression in relation to principles that guide developmental processes more broadly (e.g. holism, differentiation) or in terms of theoretically relevant concepts (e.g. Piagetian stages).

• Many of the developmental studies combine the results of males and females, thereby obscuring any age or developmental trends. There is some evidence to suggest that age trends in developmental symptoms may be confined to girls only (Angold, et al., 1987). This possibility needs to be investigated more specifically, thus future developmental studies also need to include a gender analysis.

• Future research also needs to focus on establishing how patterns of comorbidity develop over time as a part of the process of defining the natural history of depression, and also to establish how comorbid disorders relate to the clinical presentation of depressed children and adolescents.

• Age and development clearly alter some of the manifestations of depression and make certain signs and symptoms more or less prominent. Thus, studies which select subjects with preconceived notions of what constitutes major depression will be unable to clarify the question of whether alternate forms of depression occur at different ages. Nor will they be able to delineate whether other signs or symptoms, not regularly asked about, have additional significance (Carlson & Kashani, 1988).

In conclusion, despite the paucity of studies and methodological limitations in the literature, it is important to acknowledge that in the major domains of affect, cognition and behaviour there are many similarities between children, adolescents and adults. As age increases more similarities than differences become evident. It is also important to emphasise that child and adolescent depression needs to be considered in the context of developmental continuity and change. Consequently a clear theoretical framework is essential for relating issues or findings across developmental periods.

CHAPTER 5

GENDER DIFFERENCES IN THE EXPRESSION OF DEPRESSION IN CHILDREN AND ADOLESCENTS

1. INTRODUCTION

As well as developmental or age-related differences in the expression of depressive symptoms, there is also a substantial body of literature which indicates that there are marked gender differences in the way males and females experience, and express depressive symptoms during adolescence and possibly childhood. Both biological and sociological explanations have been posited to account for these findings. Biological explanations propose that prenatal organisational influences on the brain affect the development of gender-specific behaviours, including the expression of depressive symptoms. In contrast, sociological explanations propose that although behaviour may be influenced by biological factors, both boys and girls learn to inhibit or express behaviours in specific ways (Susman, Dorn, & Chrousos, 1991).

The following section critically reviews the research investigating gender differences in depressive symptomatology. All of the studies to date have focused on investigating a variety of depressive symptoms in community samples. Thus, little can be written about gender differences in the expression of depressive symptoms, or depressive disorders, in clinical samples.

2. GENDER DIFFERENCES IN THE EXPRESSION OF DEPRESSIVE SYMPTOMS IN CHILDREN

Few studies have investigated gender differences in the expression of depressive symptoms in children and no studies exist which have looked at this phenomenon in children younger than 6 years.

Worchel, et al (1987) administered the CDI to a sample (n=304) school students aged 6 through to 18 years. Subjects were divided into three groups based on severity of depression. 72% of the sample were not depressed, 21%

reported mild depression (cut-off=12), 7% reported severe depression (cut-off=19). Worchel et al (1991) found that significantly more girls (12%) aged 6-14 years reported more depressive symptoms than boys (2%). Worchel did not state whether girls in this age group were more frequently depressed than boys. Although they found a gender difference in the pattern of adolescents (12-18 years) depressive symptomatology, there was no gender difference in the pattern of depressive symptomatology in younger children aged 6-14 years, thereby suggesting that the gender differences in expression of depressive symptomatology does not emerge until adolescence. Worchel et al (1987) reported that adolescent females were more likely to endorse items such as feeling sad, alone, tired, worrying about doing things wrong and having bad things happen, not liking oneself and wanting more friends. Adolescent males were more likely to report getting into fights and having to push to do schoolwork. They concluded that depressed females are more prone to internalise problems, whereas, depressed males are more likely to externalise or act out problems. The results of Worchel et al's (1987) study need to be interpreted with caution. Although identifying a group of young children (6-14 years) in their study, these children would have included pre- and post-pubertal girls and boys. Thus any effects that pubertal status may have had on gender differences in the expression of depression would have been obscured.

Similar results to those of Worchel et al (1987), were found by Weiss & Weisz (1988), who compared child (8-11 years) and adolescent (12-16 years) factor structures on the CDI in a clinically-referred sample. Weiss et al's (1988) aim was to assess how gender and developmental differences might influence the manifestation of depression as measured by the CDI. Weiss et al (1988) identified three separate factors on the CDI however, they did not find significant gender difference between young boys and young girls on any of the factors. This was in contrast to the finding of a significant gender difference on factor 1 (general factor) and factor 2 (externalising behaviour factor), with adolescent girls scoring higher on factor 1 and adolescent boys scoring higher on factor 2 of the CDI. Weiss et al (1988) concluded that as gender differences were evident in only the older group, gender differences in the patterning of depressive symptoms may originate at some point between childhood and adolescence.

Achenbach & Edelbrock (1983b) large-scale multivariate study has also provided some data on the nature of depressive syndromes in early childhood through to adolescence. They administered detailed behavioural

checklists to parents and children (age 4-16 years). Factor analysis of the behaviour checklist indicated that depressive symptomatology varied across the ages and also between genders. A depressive factor was present for each age/sex group, however, is was composed of different items for each group. For girls, aged 12-16 years, the depression factor clustered with items specifically related to withdrawal, being secretive, shy and timid and liking to be alone. For boys ages 6-11, suicidal talk was associated with other symptoms of depression. This was not the case for boys ages 4-5 years. For girls ages 6-11, anxiety and feelings of being persecuted were associated with other depressive symptoms, however, for girls aged 4-5 years, these symptoms were not part of the depressive factor.

In their longitudinal study, Nolen-Hoeksema, Girgus, & Seligman (1991) examined the explanatory style of 352 (178 boys; 174 girls) third grade (8 years old) school children. Depression was assessed with the CDI (Kovacs, 1980/81), explanatory style was assessed with The Children's Attributional Style Questionnaire (CASQ; Kaslow, Tanenbaum, & Seligman, 1978). Four testing sessions were conducted over the period 1985 to 1987. Nolen-Hoeksema et al (1991) reported that males consistently reported more depressive symptoms than females. Males and females were equally likely to report sad mood, self-derogation, and physiological symptoms, however, males were more likely to report behaviour disturbance symptoms and anhedonia.

In sum, it is difficult to make any firm conclusions based on the limited number of studies investigating gender differences in the expression of depressive symptoms in children. The results of the available studies are mixed and comparisons difficult due to differing methodology and sample characteristics. Worchel et al (1987) and Weiss & Weisz (1988) found that no significant gender differences in the expression of depression as measured by the CDI, in either a non-clinical or clinical sample of children, within the age range 6-14 and 8-11 years respectively. In contrast, Achenbach & Edelbrock (1983b) reported a difference in depressive symptoms between girls and boys aged 4-5 years and 6-11 years. Suicidal talk was associated with other depressive symptoms in boys aged 6-11, whereas, anxiety and feelings of being persecuted were associated with other depressive symptoms in girls in this age group. Neither of these symptoms were part of the depressive factor for girls and boys aged 4-5 years. Nolen-Hoeksema et al (1991) found that 8 year old males were more likely than girls of the same age to report symptoms of behavioural disturbance and anhedonia as measured by the

CDI. Clearly much more research is needed in this area in order to establish if, and when, gender differences in depressive symptomatology occur.

3. GENDER DIFFERENCES IN THE EXPRESSION OF DEPRESSIVE SYMPTOMS IN ADOLESCENTS

In contrast to the sparse literature on gender differences in expression of depressive symptoms in children, a number of studies have investigated such differences in adolescents. As with the research with children, all of these studies have focused on investigating depressive symptomatology in school samples of adolescents. Consequently, it is not known if, and to what extent, these findings are able to be generalised to depressive disorders in clinical samples.

Baron & Joly (1988) for example, investigated the depressive symptoms of 249 (152 females; 97 males) adolescents aged 12-17 years on the BDI. Subjects included in this study had a BDI score of 15 or more suggesting they had at least mild depression. Baron et al (1988) did not find differences in the intensity of depressive symptoms, however, they found different patterns for male and female adolescents in their expression of depression. Males exhibited symptoms of irritability, work inhibition, social withdrawal and sleep disturbance. In contrast, adolescent females' presenting symptoms were characterised by body image distortion, loss of appetite, weight loss, mood and lack of satisfaction. Thus, while depressed adolescent females' external focus was characterised by bodily concerns, depressed adolescent males' external focus was characterised by performance concerns. Baron and Joly (1988) note that this pattern is reflected in the adult literature (Vredenburg, Krames, & Flett, 1986; Hammen & Padesky, 1977).

Baron & Campbell (1993) extended their 1988 study and examined whether females continued to have higher mean scores on all discriminating items in mid-adolescence. More specifically, they assessed gender differences in expression of depressive symptoms in a non-clinical sample (n=98 females; n=55 males) of adolescents aged 14 years through to 16 years. Subjects were assessed at two points in time, approximately 1 year apart with the BDI and the Reynolds Adolesecent Depression Scale (RADS; Reynolds, 1987). Baron et al (1993) reported that females continued to have higher mean scores on all discriminating items which tended to represent

stereotypically feminine characteristics (e.g. weight loss, crying, loss of appetite). Compared to the results obtained at the first assessment time fewer items discriminated between the groups on the basis of gender at time 2 assessment. This was particularly the case for the BDI, thereby indicating that the BDI and RADS were operating differently. Baron et al (1993) suggested that this discrepancy appeared to be due to differences in the wording of the instruments, for example, results for items which reflected the same content (i.e. fatigue) were not consistent across instruments. The findings of this study suggest that results from the BDI and RADS cannot be directly compared, particularly when patterns of depressive symptoms are being examined. In addition, as Baron et al (1993) results indicate, depressive symptomatology as measured by the RADS and BDI is more characteristic of females. Thus, these instruments may be relatively insensitive to the depressive experience of males. Baron et al (1993) suggested caution needs to exercised when interpreting depression scores on the RAD and BDI, particularly if the same cut-off points are used for both sexes.

Donnelly & Wilson (1994) conducted a factor analysis of the scores on the CDI of a school sample of 887 (457 males; 430 females) adolescents (11-15 years). They found that males and females differed on dimensions of depression as measured by the CDI. Males, more than females, expressed symptoms of depression which Donnelly et al (1994) described as 'behavioural' or 'acting out' in nature. In contrast, females displayed features of depression associated with 'negative self-concept'. Donnelly et al (1994) noted that some researchers have suggested that there are 'essential' and 'associated' features of depression. Essential features refer to those that are common to everyone who suffers from depression, in contrast, associated features are those which may be specific to certain groups of individuals. For example, male adolescents may express associated clusters of symptoms which may be described as acting out, whereas females may display associated features of depression more suggestive of a 'negative self-concept'. Donnelly et al (1994) also suggests that the possibility that scores on certain parts of the CDI may reflect the presence of other forms of psychopathology, rather than expressions of depression. As discussed previously, comorbidity tends to be the rule, rather than the exception, in regard to depression in children and adolescents.

Ostrov, Offer, & Howard (1989) investigated the gender difference in psychiatric symptomatology of school sample of adolescents, 16 through to

18 years old (N=497; 249 males; 248 females). Research instruments administered to the adolescents included the Offer Self-Image Questionnaire (OSIQ; Offer, Ostrov, & Howard, 1977), the Delinquency Checklist (DCL; Short & Nye, 1979) and the Symptom Checklist (SCL; Derogatis, Lipman, & Covis, 1973). All three instruments were shortened for this study. They reported that symptom expression was affected by gender. More specifically, adolescent females were more prone to report inwardly directed symptoms such as depression and anxiety, whereas, male adolescents were more likely to report acting out behaviour. The SCL is not commonly used to measure depressive symptomatology thus, comparisons with other studies are limited. Ostrov et al (1989) hypothesised that their findings may be accounted for by cultural or social factors which emphasise the desirability of girls being open to affective and interpersonal experience and boys being prepared for action or oriented to problem solving.

Webb & VanDevere (1985) conducted a study with 1015 school children aged 5 through to 19 years to examine gender differences in the expression of depression Webb et al (1985) did not report number of males and females in their study). Depression was measured with two scales (Unhappiness & Resentfulness) from the Structured Paediatric Psychosocial Interview (SSPI; VanDevere & Webb, 1980). Webb et al (1985) reported that the Unhappiness scale taps an individual's perception of mood lability, while the Resentfulness scale measured individuals cognitive orientation, social animosity and self-destructive ideas. Webb et al (1985) reported a significant interaction between age, sex and expression of depressive symptoms. More specifically, as age increased the gender differences in the expression of depressive symptoms, as measured by the two SSPI scales, increased. Males scored higher than females on the Resentment scale as age increased and females scored higher than males on the Unhappiness scale as age increased. Webb et al (1985) concluded therefore that gender differences in the expression of depression are acquired, probably as a result of differential socialisation processes. This study has a number of limitations. It is based on a sample of school children and Webb et al (1985) provided little information in regard to the demographic and method of sampling thus generalisations about the results are limited. This study is also limited by the use of the SSPI to measure depressive symptoms as this instrument is not commonly used in other studies thus making comparisons difficult. Moreover, Webb et al (1985) did not report the reliability or validity of this scale and do not provide information in regard to the severity of depression in their subjects.

Not all studies have found a gender difference in the expression of depressive symptomatology in adolescence. Campbell, Byne, & Baron (1992) for example, investigated gender differences in the expression of depressive symptoms in non-clinical sample of 207 adolescent (83 males; 124 females), aged 13 through to 15 years. Depression was measured with the RADS and the BDI. Campbell et al (1992) reported females scored higher than males on all items on both the RADS and the BDI. These results differ from other studies discussed in this section which have reported that some symptoms are more characteristic of males than females. Campbell et al (1992) suggest that the pattern of symptom expression found in other studies may be unique or more readily apparent in more depressed samples. They note that the mean BDI score for the sample in this study (BDI=8.0) was substantially lower than that reported by Baron and Joly (1988; mean= 21.11). They concluded that it appears that females may be more likely to report a variety of depressive symptoms, however, when overall depression scores are high, both males and females express symptoms congruent with their respective gender roles. Likewise, Makaremi (1992) conducted a study to investigate gender differences on Zung depression scale in 200 (100 females & 100 males) Iranian high school students. The mean age for the sample was 15 years and mean depression scores were 47.0 for girls (SD=.98) and 48.5 (SD=1.11) for boys. Makaremi et al (1992) found no gender differences on the total score for depression and no significant gender difference on any of the five subscales of Zung's depression scale.

4. GENDER DIFFERENCES IN NORMAL EMOTIONS

There is some evidence to suggest that there are also gender differences in normal adolescent experiences of emotion which may parallel the gender differences in the expression of depression. Stapley & Haviland (1989) for example, conducted a study to investigate the frequency, intensity and duration of normal emotions and the situation in which they occurred in 262 adolescents, aged 11 through to 17 years. Izard's Differential Emotions Scale (DES; Izard, Dougherty, Bloxom, & Kotsch, 1984) was used to assess the frequency, intensity and duration of subjective emotional experience and The Elicitors of Emotion Questionnaire (EEQ; Stapley & Haviland, 1986) was used to examine the context of emotional experiences. Significant gender differences were found on emotional saliency scores which were combinations of each individuals reports of the frequency, intensity and

duration of experiences of each emotion. Girls reported higher salience of surprise, sadness, self-hostility, shame, shyness and guilt. Boys reported higher saliency of contempt. There were no gender differences in regard to joy, interest, anger, or disgust in this age group. The most salient emotions were experienced with peers, however boys experienced both surprise and sadness more often when alone than did girls. There were also gender differences in the events associated with salient emotions. Boys found activities and achievement and girls found affiliation to be emotionally salient. Stapley et al (1989) suggested that their results indicate that gender differences in emotion are pervasive rather than confined to 'depressive emotion' and include differences in the organisational properties of emotion. They also suggest that the gender differences in emotion profiles indicate that among boys outer-directed emotions predominate, whereas, in girls inner-directed negative emotions are more characteristic. These results are consistent with the studies investigating gender differences of expression of depressive symptoms in adolescents. The results of Stapley et al's (1989) study also suggest that depression scales may be biased toward measuring deviation from normal female emotional experience as these scale contain few items that are sensitive to the emotional experience of males. Future research needs to focus on examining gender differences in normal emotional experience, so as to ascertain whether such differences parallel gender differences in depression.

5. SUMMARY

Overall, too few studies have been conducted and too many methodological issues exist to be able to deduce any trends in the literature on gender differences in expression of depressive symptoms in children. Of the studies currently available, some have reported finding gender differences (Achenbach et al 1983; Nolen-Hoeksema et al, 1991), however, others have not (Worchel et al, 1987; Weiss et al, 1988). It is difficult to reconcile these inconsistent findings due to different methodologies across the studies. A number of methodological issues also plague the research in regard to adolescents, however, the majority of studies tend to find a gender difference in the expression of depressive symptoms in this age group. In general, it appears that, depressed females tend to exhibit a negative self-concept and internalising pattern of depressive symptomatology, whereas, males tend to exhibit acting out or externalising depressive

symptomatology. Thus, as well as developmental differences, there are also gender differences in the expression of depressive symptoms.

It is likely, although not certain, that gender differences in the way males and females experience and express depressive symptomatology is the result of complex socialisation interactions. Socialisation is the process whereby individuals learn to conform to group standards, mores and customs. Females, for example, are reinforced for being open to affective and interpersonal experiences and males are reinforced for being independent and action oriented. Gender socialisation facilitates the construction of gender role stereotypes, or gender schemata of how males and females should act, think and feel. It has been suggested by some researchers (e.g. Campbell et al, 1992) that through the process of socialisation people learn to express their psychological distress in gender-appropriate ways. Thus males will tend to report more depressive symptoms congruent with the masculine stereotype, while females will tend to report depressive symptoms congruent with feminine stereotype. It has also been argued that there is an association between stereotypically feminine characteristics and depression, whereas, the masculine stereotype is not. Male stereotypes for example, tend to emphasise power, confidence and competence, attributes inconsistent with depression. In contrast, the female stereotype is characterised by passivity, helplessness and dependent, attributes which are consistent with depression (Ruble, Greulich, Pomerantz, & Gochberg, 1993). Consequently, it is hypothesised that, the degree to which girls incorporate gender stereotypical beliefs into their self-schema may create a vulnerability to depressive symptoms. The research for this hypothesis will be reviewed in a later section.

There is evidence to suggest that gender differences in depressive symptomatology may be an extension of gender differences in normal emotions. Thus it is important to distinguish between gender differences in the expression of depressive symptoms derived from gender stereotypes and gender differences unique to depression. As Hammen & Padesky (1977) note, patterns of depressive symptoms unique to depressed subjects are especially important because they reflect actual gender differences, rather than an accentuation of stereotyped responding. Theories of gender differences in depression need to be investigated in the context of the continuity between normal mood states and depressive phenomena. More research is needed to assess when gender differences in the expression of depressive symptoms occur. If there is a consistent difference between

children and adolescents then such gender differences in the expression of depression alone, cannot account for the emergence of gender differences. Longitudinal studies are needed which utilise sampling across both child and adolescent years. Future research also needs to investigate gender influences on expression of depression across cultures to further examine the role of socialisation.

The possibility cannot be ruled out that the predominance of depressive symptoms in adolescent girls reported in the literature, reflects inappropriate measurement, rather than actual events. In as much as males and females tend to differently exhibit internalising and externalising symptoms, the number of items tapping different symptoms included on a measure may partially determine whether more boys, or more girls are diagnosed with depression. Campbell, et al (1992) for example, notes that some researchers (e.g. Elpern & Karp, 1984) have found that subjects, who are categorised as stereotypically feminine on the basis of sex role inventories, tend to obtain higher depression scores than subjects categorised as stereotypically masculine. Campbell et al (1992) suggest that the gender difference in overall depression scores might be reduced in studies which measure and statistically control for femininity. A number of studies (discussed in detail in assessment section) indicate that many self-report depression scales do not contain sufficient items which are sensitive to the male emotional experience (Baron et al, 1988; Roberts et al, 1991; Stapley et al, 1989). Such gender differences have important implications for the interpretation of depression scores for males and females. This, in turn, has connotations for epidemiological research and the general assumption that females become more depressed than males after puberty. The inconsistent results in the literature may be because different instruments lead to different conclusions. Clearly, it is important to recognise that gender differences exist and to interpret depression scores differentially on the basis of empirically derived norms.

There has not been enough research to determine whether gender differences in the expression of depressive symptoms occur in children. It is likely, however, that the difficulties of assessing depressive symptoms in young children, combined with assessment instruments which do not adequately tap developmental features of depression, may account for why gender differences in the expression of depressive symptoms in this age group are not consistently found. Alternatively, gender differences may not be evident, perhaps because they are overridden by maturational factors.

There are a number of methodological problems in the research on gender differences in depressive symptomatology. All of the studies reported here have focused on gender differences in depressive symptoms in community samples, consequently, little is known about gender differences in depressive disorders in clinical or community populations. The studies included here vary greatly in the research designs they utilise and the measurement instruments used to assess depression and associated variables. They also vary considerably in the age groups they examine. Most studies group children together of wide-age range, however, a child of 6 years is considerably different, developmentally, from a 9 or 11 year old. These studies will not be sensitive enough to pick up developmentally important differences between different ages. Moreover, none of the studies discussed take account of pubertal status. In fact, more often than not, children and adolescents of differing pubertal status are grouped together into the same experimental or control group. Thus any effect that pubertal status may have on the expression of depressive symptoms is obscured.

Variations in the results in this area may also be due to differences in the level of depression in subjects. Often researchers do not make clear the severity of depressive symptomatology of their subjects and/or group subjects together with differing levels of depression thereby concealing any possible interactions between gender, expression and severity of depression. There is some indication that the level of depressive symptoms may be an important variable to consider in this area. Campbell, et al (1992), for example, reported that gender differences in expression of depressive symptoms were not apparent when the level of depression was low. As the studies to date only rely on self-report of depressive symptoms, the possibility that the results may be due to the differential willingness (or ability) of males and females to attest to certain symptoms, cannot be cancelled out. Collecting data from multiple informants may help to resolve this issue.

Clearly, adequate assessment techniques need to be developed which will assist in unravelling the origin of gender differences in the expression of depressive symptomatology. Comorbid disorders also have implications for the expression of depression in both males and females. If some comorbid disorders are more predominant in females than males and vice versa then the presentation of symptoms is likely to reflect this. Moreover, it is possible that factor(s) identified as influential in gender difference in

depressive symptomatology may, in fact, be a causal factor(s) for another comorbid disorder.

CHAPTER 6

DISTINCTIONS BETWEEN DEPRESSED MOOD, DEPRESSED SYNDROME AND DEPRESSIVE DISORDERS

1. INTRODUCTION

Research on depressive phenomena in children and adolescents has been hindered because researchers have utilised different definitions of depression and different classification systems (Compas, Ey, & Grant, 1993). There appear to be three approaches to the assessment and classification of depression in children and adolescents. These include (a) a focus on depressed mood only, (b) empirically derived syndromes which include a number of depressive symptoms and (c) a cluster of depressive symptoms that meet diagnostic criteria for a depressive disorder. As Peterson, Compas, Brooks-Gunn, Stemmler, Ey, & Grant (1993) note, each of these approaches reflects different assumptions about the nature of depression, serves different purposes and reflects a different level of depressive phenomena. Often, however, each of the three approaches has been subsumed under the general label of depression. This has created considerable confusion and limits interpretation and comparisons across studies.

2. DEPRESSIVE SYMPTOMS

Research on depressive symptoms typically focuses on the presence of mood symptoms such as sadness or unhappiness. Assumptions are not made in regard to the cause of the depressed mood, it may occur for an unspecified period of time, and may, or may not, be associated with other symptoms. Depressed mood is usually measured by self-report and/or parent observation. Compas, et al (1993) notes that the various scales used to measure depressed mood have a number of features in common. They typically include a list of emotions and symptoms which are thought to tap the central features of depressive disorders. Usually subjects are presented with either a Likert-type scale or choices from a variety of responses. Subjects are asked to rate the degree to which each item applies to them, with each response to an item reflecting varying levels of severity.

Typically the scales contain a variety of items which are indicative of symptoms other than depressed mood, consequently, total scores on these scales are not pure indexes of depressed affect (Compas, et al., 1993). Two scales which have been commonly used to assess depressed mood in adolescence are the Emotional Tone Scale of the Self-Image Questionnaire for Young Adolescence (Peterson, Schulenberg, Abramowitz, Offer, & Jarcho, 1984) and the Kandel Depression Scale (Kandel & Davies, 1982). The Children Depression Inventory (Kovacs, 1982) is an example of a self-report measure which includes a number of symptoms other than depressed mood. The CDI has been used in variety of studies of clinically referred and nonreferred children and adolescents.

3. DEPRESSIVE SYNDROMES

There is substantial empirical evidence to suggest that numerous aspects of depression are associated with many other problems. Thus depression can be viewed as a constellation of behaviours and emotions that have been found to occur together as a set of recognisable problems. The reports from large samples of teachers, parents and self-report measures have been used to identify a variety of complaints central to the construct of depression in children and adolescents. Generally, depressive syndromes have then been derived from methods such as factor analyses or principal components analyses (Compas, et al., 1993). Symptoms of depressive syndromes typically include features such as; feels lonely, cries, fears doing bad things, feels the need to be perfect, feels worthless, nervous, guilty or sad, and worries (Peterson, et al., 1993). Similarly to the study of depressed mood, no assumptions are made in regard to etiology of depressive syndromes. Commonly used measures of depressive syndromes include the Quay-Peterson Revised Behaviour Problem Checklist (Quay & Peterson, 1983) and the Child Behavior Checklist (Achenbach & Edelbrock, 1983a). Teacher checklist include the Teachers Report Form (Achenbach & Edelbrock, 1986) and the Conners Teacher Questionnaire (Conners, 1973). The Youth Self-Report (Achenbach & Edelbrock, 1987) is an example of multivariate self-report measure. Self-report measures of depressive syndromes have not been used with children as it has been assumed that their cognitive abilities and reading skills preclude this.

4. DEPRESSIVE DISORDER

There are two major diagnostic systems used to diagnose depressive disorders; the Diagnostic and Statistical Manual for Mental Disorders (American Psychiatric Association, 1987) and the International Classification of Diseases (World Health Organisation, 1990). The DSM-III-R (and more recently the DSM-IV), is the most widely used diagnostic system internationally. This is a method of classification which bases the diagnoses of disorders on the presence, duration and severity of sets of symptoms. As well as assuming that depression includes the presence of an identifiable syndrome of associated symptoms, this approach also assumes that these symptoms are associated with significant levels of current distress and functional impairment. With only a few exceptions, children and adolescents are diagnosed with the same criteria as adults. In the DSM, depressive disorders are classified under the general category of mood disorders, which encompasses both depressive disorders and bipolar disorders. As the focus of this thesis is on depressive disorders, only these will be discussed here. Children and adolescents with depression may be diagnosed with a major depressive disorder (MDD) or dysthmic disorder (DD) or both. To meet the criteria for MDD an individual must have experienced five or more of the following symptoms for at least two weeks at a level that differs from previous functioning. At least one of the symptoms must be either (1) depressed mood most of the day, nearly every day. In children and adolescents, this can be irritable mood; or (2) markedly diminished interest or pleasure in all, or almost all activities most of the day, nearly every day. Other possible symptoms include (3) significant weight loss when not dieting or weight gain, or decrease or increase in appetite nearly every day. In children, failure to make expected weight gains should be considered; (4) insomnia or hypersomnia nearly every day; (5) psychomotor agitation or retardation nearly every day; (6) fatigue or loss of energy nearly every day; (7) feelings of worthlessness or excessive or inappropriate guilt nearly every day; (8) diminished ability to think or concentrate, or indecisiveness, nearly everyday; (9) recurrent thought of death, recurrent suicidal ideation without a specific plan or suicide attempt or a specific plan for committing suicide.

A Dysthymic Disorder is diagnosed when the individual has experienced depressed mood for most of the day, for more days than not, for at least 2 years, without more than two symptom-free months. In children

and adolescents, mood can be irritable and duration must be at least 1 year. In addition, there must be the presence, while depressed, of two or more of the following; (1) poor appetite or overeating; (2) insomnia or hypersomnia; (3) low energy or fatigue; (4) low self-esteem; (5) poor concentration or difficulty making decision; (6) feelings of hopelessness. There cannot have been a major depressive episode during the first two years for adults and one year for children and adolescents of the disturbance. The occurrence of a major depressive episode after the initial 2 years, or 1 year for children/adolescents warrants the diagnosis of MDD and DD. This is often referred to as "double depression". An additional diagnostic category called Depressive Disorder Not Otherwise Specified may be used to classify children and adolescents with symptoms that do not meet criteria for MDD, DD, adjustment disorder with depressed mood or with mixed anxiety and depressed mood or depressive symptoms about which there is inadequate information (DSM-IV). Assessment of depressive disorders is typically via clinical interviews.

5. RELATION BETWEEN DEPRESSIVE SYMPTOMS, SYNDROMES AND DISORDERS

At present, the relation between the three levels of depressive phenomena is unclear. In particular, questions remain as to whether the difference between depressive symptoms, depressive syndromes or depressive disorders is essentially qualitative or quantitative. Some have argued that severe clinical depression and mild depressive symptoms are just different points on the same continuum of depressive symptoms. Peterson, et al (1993) for example, has noted that the presence of depressed mood has been found to be the single most powerful symptom in differentiating clinically referred and non-referred youths. Consequently, it is considered important to examine both varying levels of depressive symptoms and depressive disorders to gain an understanding of gender differences in depression. Others, however, posit that clinically severe levels of depression and subclinical levels of depressive symptoms are two distinct types of depression, each with different etiology, features, course and prognosis (Depue & Monroe, 1978). Meyers & Weissman (1980) point out, that overall, there is not a strong relationship between scoring high on depressive symptoms scales and meeting criteria for a major depressive disorder according to the RDC or the DSM-III. In their comparison of the core features of depressive symptoms, syndromes and disorders Compas, et

al (1993) reported only two symptoms, sad or depressed mood and low self-esteem or feelings of worthlessness, are common to all three approaches. The difference among the three approaches centred on the inclusion or exclusion of anxiety and somatic symptoms. Four other symptoms, loneliness, guilt, suicidal ideation and emotional sensitivity were common to two of the approaches. Clearly the limited overlap in depressive symptoms in these various approaches would result in little correspondence in the identification of depressive problems. Studies which employ self-report questionnaires in the general population are thought to provide little information in regard to the epidemiology, etiology or gender differences of clinically severe depressive disorders.

Researchers examining studies of the correspondence among depressive symptoms, syndromes and disorders have used diagnostic interviews to assign DSM-III-R diagnosis and have gathered information on depressed mood and syndromes in the same individuals. In their review of the empirical correspondence between depressed mood, syndromes and disorders, for example, Compas et al (1993) reported that diagnoses of MDD or DD derived from clinical interviews are related to both scores on self-report inventories of depressive symptoms and depressive syndromes from multivariate checklists. Diagnostic interviews, however, identify a subgroup of more severely symptomatic individuals from a larger group who report elevated levels of depressed mood and other symptoms.

Based on their findings, Compas et al (1993) have proposed a cogent hierarchical and sequential model of depressive phenomena. They suggest that the three levels of depressive phenomena reflect the progression of depressive phenomena in adolescents. Many adolescents experience depressed mood due to a variety of factors including stress, normal hormonal fluctuations and interpersonal interactions. For many the depressive mood remits, however, for a small group of these adolescents, the depressive mood is exacerbated and develops into depressive syndrome. Compas et al (1993) hypothesis that the progression from depressed mood to a depressive syndrome is mediated by dysregulation or dysfunction in biological, stress and/or coping resources. Of this small group who experience depression at the syndromal level, a further subsample may develop a depressive disorder. Similarly to the transition from depressed mood to depressed syndrome, the transition from depressed syndrome to depressed disorder is mediated by dysregulation or dysfunction in biological/stress and/or coping resources. Presently, it is not clear whether

this model also applies to depression in adults. Compas et al (1993) note that there is some evidence to suggest that depressive phenomena are continuous during childhood and adolescence but may be more discontinuous in adulthood. In contrast to children, depressive symptoms and depressive disorders in adults are generally conceptualised as qualitatively distinct and not linearly related.

Clarifying the relations between the levels of depressive phenomena is crucial if a greater understanding of the nature of depression in children and adolescence is to be gained, and more importantly to the focus of this paper, a greater understanding of gender differences in depression. Whatever the relation between the three approaches there is substantial evidence to indicate that even moderate levels of depressed mood can have substantial effects on children's and adolescent's functioning (Nolen-Hoeksema, Girgus, & Seligman, 1992; Peterson, et al., 1991; Susman, et al., 1991). There is also evidence to suggest that children with depressive symptoms are at risk for major depressive disorders (Kovacs, Feinberg, Crouse-Novak, Paulauskas, Pollock, & Finkelstein, 1984b). Clearly, depressive symptoms in children and adolescents, although not meeting criteria for a depressive disorder should be of considerable concern to mental health professionals. Almost all the research on gender differences in depression in children and adolescents has focused on depressive symptoms, rather than on depressive disorders meeting DSM criteria. Consequently, the focus of this thesis is on the emergence of gender differences in depressive symptomatology. As Nolen-Hoeksema & Girgus (1994) note, one of the most important questions for future research is whether the same factors lead to the emergence of gender differences in depressive symptoms and depressive disorders.

CHAPTER 7

ASSESSMENT OF DEPRESSION IN CHILDREN AND ADOLESCENTS

1. INTRODUCTION

Reliable and valid assessment methods are essential to the investigation of gender differences in child and adolescent depression. In contrast to the investigation of adult depression there is a distinct lack of well developed assessment techniques for the assessment of depression in this group (Kazdin, 1981a; Nolen-Hoeksema & Girgus, 1994). This factor has been a major obstacle in the investigation of gender differences in childhood and adolescent depression. As there has not been a consensus in the literature in regard to the most reliable and valid methods to assess gender differences in depressive symptoms and depressive disorders in children and adolescents, a variety of assessment techniques have been utilised. These include self-report inventories, parent and teacher reports, peer nominations and clinical interviews. The following section discusses each of these methods and highlights issues and problems that contribute to the difficulties of doing research in this area. Table 1, 2, and 3 provide a brief overview of all the instruments used to assess gender differences in depressive symptoms and depressive disorders.

2. SELF-REPORT

Most of the studies on gender differences in depressive symptoms in children and adolescents have relied on self-report instruments. The most widely used self-report measure to assess gender differences in childhood depression has been the Children's Depression Inventory (CDI; Kovacs, 1982) which was developed from the Beck Depression Inventory (BDI; Beck, Ward, Mendelson, & Erbaugh, 1961). The CDI was used in all, but one of the studies reviewed here. In contrast, a variety of self-report instruments have been used to assess gender differences in depressive symptoms in adolescents. Depressed mood has been assessed with specifically designed scales or with subscales of existing measures. Two commonly used scales used to assess depressed mood include the Emotional Tone Scale of the Self-Image Questionnaire for Young Adolescents (SIQYA; Peterson, et al., 1984)

and the Kandel Depression Scale (KDS; Kandel & Davies, 1982). Other self-report scales commonly used to assess depressive symptoms include the Beck Depression Inventory (BDI; Beck, et al., 1961), the Reynolds Adolescent Depression Scale (RADS; Reynolds, 1986), the CDI, and the Center for Epidemiological Studies of Depression Scale (CED-S; Radloff, 1977).

These scales have a number of features in common. The items in the scales are thought to tap the essential features of depressive disorders. Compas et al (1993) have noted that these items are commonly drawn from the Research Diagnostic Criteria (RDC; Spitzer, Endicott, & Robbins, 1978a; Spitzer, Endicott, & Robins, 1978b) for depression, the DSM-III (American Psychatric Association, 1980) or from existing measures of adult depression. Typically the child or adolescent is presented with a Likert-type scale and asked to indicate how often, in the last week or so, they have experienced particularly depressive symptoms. Cut-off scores are often used to categorise the individual as either mildly, moderately or severely depressed. Compas et al (1993) noted that all of these scales meet at least minimum criteria for internal consistency reliability, test-retest reliability and stability over moderate time periods.

(1) Problems With Self-Report Measures

Self-report measures typically require children to endorse specific behaviours which may be characteristic of themselves. There is considerable debate in the literature as to the ability of young children to do this. It has been suggested by some writers (e.g. Puig-Antich, Chambers, & Tabrizi (1983) that children, at least from middle childhood onwards, can give accounts of their depressive symptoms. Others, however (e.g. Larson, Raffaelli, Richards, & Ham, 1990), argue that subjective state measures may be an inadequate means of identifying depression in prepubertal children because they have limited language and cognitive abilities. There is evidence for example, that depressed children are less likely to verbalise sadness even though they appear sad and tearful (Garber, 1984) and are more likely to deny feeling sadness (Glasberg & Aboud, 1981; Kazdin, 1981b). Young children also appear to have difficulty distinguishing between sadness and anger (Borke, 1973).

There is also debate as to whether young children are able to provide reliable information in regard to the onset and duration of their symptoms. Reynolds & Graves (1989) conducted a study to examine the test-retest

reliability of children's reports of depressive symptoms over-time. These researchers reported that, overall, there was strong support for the reliability and stability of children's self-report of depressive symptoms, at least in the short term (4 week internal), as measured by the Reynolds Child Depression Scale (RCDS; Reynolds, 1989a). In their study of school children's self-report and parent report of depressive symptomatology, Angold, Weissman, John, Wickramaratne, & Prusoff (1991) reported that the age of the children at interview had a significant effect upon the dating of the onset of dysphoric episodes. More specifically, episodes of dysphoria were reported as occurring earlier by those interviewed between the ages of 16 and 18 years, than those interviewed at the younger age (6-15). Angold et al (1991) argue than developmental changes in the children were the most likely explanation for these results.

Although self-report inventories have the advantage of being easily administered to adolescents they are subject to biases such as the individuals ability, honesty or willingness to report depressive symptoms. Furthermore, a number of writers have questioned the discriminative ability of self-report measures of depressive symptoms. Kazdin (1988a) and Semrud-Clikeman & Hynd (1991) for example, have reported that self-report measures do not invariably discriminate among children or adolescence who have been independently diagnosed with major depression. Kazdin (1988a) has noted that, in general, children and adolescents with a diagnosis of depression tend to score high on self-report inventories than those without such diagnoses, however, the differences are not always clinically or statistically significant. In their study of the factor structure of the CDI in clinic-referred children and adolescents Weiss & Weisz (1988) reported that six of the items on the CDI were relatively uninvolved in the factor structure for young children (8-11 years). They concluded that the depression in children may involve fewer symptoms than in adolescence. An alternative explanation is that the CDI does not contain sufficient items which are developmentally appropriate to tap depressive symptomatology in young children.

Several other investigators have reported that the CDI is very limited in its ability to discriminate depression from other frequently comorbid disorders such as anxiety and conduct disorders (Kovacs, 1985a; Nelson, Politano, Finch, Wendel, & Mayhall, 1987; Saylor, Finch, Baskin, Darnell, & Furey, 1984a; Saylor, Finch, Spirito, & Bennet, 1984b). Similarly, in their study examining the relation between the BDI and a number of other self-

report measures of psychopathology in a student population (Gotlib, 1984) reported a significant correlation between all of the psychopathology scales and high scores on the BDI. Factor analysis indicated that the scales were measuring a unitary factor of general distress, rather than a discrete phenomenon of depression. Roberts, Lewinsohn, & Seeley (1991) have suggested that neither the BDI nor the CES-D should be used by themselves to screen for clinical depression in either epidemiological or experimental studies. In their longitudinal study of the epidemiology of depression in adolescents they found that both scales generated many false positives. In regard to the CES-D, Allgood-Merten, Lewinsohn, & Hops (1990) has suggested that there is increasing evidence that there may be a distinction between what is measured by the CES-D and a clinical diagnosis of depression (Angold, 1988a; Lewinsohn, Hoberman, Teri, & Hautzinger, 1988). They have suggested that rather than measuring depressive symptoms the CES-D may tap a general construct of demoralisation which may be associated with a broad array of psychiatric disorders.

(2) Gender

Few studies have specifically investigated the effect of gender on assessment instruments. This is a major oversight and further impedes the acquisition of knowledge in this area. The three studies described here have not specifically looked at gender and assessment but have included a gender analysis within their research.

Roberts, Andrews, Lewinsohn, & Hops (1990) conducted a study to examine the operating characteristics of the CES-D. They derived their data from four pilot studies involving 2, 000 high school adolescents grades 9-12 (age 13-17 years approx.). Roberts et al (1990) stated that the only gender effect they found was in regard to prevalence, with females having higher depression scores than males. In regard to other dimensions of the CES-D they did not find any consistent or dramatic gender effects. More specifically, data on internal consistency and test-retest reliability indicated no variation by gender. In regard to dimensionality and salience, there was no gender differences in the motility of symptoms (depressive status over the one-month follow-up period) nor in the rank order of symptoms. Finally there was little gender difference in the factor structure of symptoms. Roberts, et al (1991) investigated the ability of the CES-D and the BDI to identify cases of DSM-III-R major depression and dysthymia in a community sample of high school adolescents. They reported that receiver

operating characteristics (ROC) analysis indicated that in order to maximise sensitivity and specificity, different caseness criteria should be used on both the BDI and CES-D for adolescent males and females. Research in this area, however, commonly utilises the same criteria for males and females. In their longitudinal study of the RADS and the BDI with 153 high school students Baron & Campbell (1993) reported that adolescent girls reported more depressive symptoms than boys and that discriminating items were stereotypically feminine in nature. Baron et al (1993) concluded that depressive symptoms as measured by the RADS and BDI are more characteristic of females than males. Thus they suggest that caution should be exercised in interpreting depression scores, particularly those of females, based on the RADS and the BDI. Interpretation of the results from this study are limited as it was based on non-clinical sample. Similar findings have been reported by Baron & Joly (1988) who conducted a discriminant function analysis of the BDI items. Baron et al (1988) investigated whether a particular combination of items statistically differentiated between adolescent males and females, aged 12 through to 17 years, who obtained a score of 15 or greater on the BDI. They identified differential patterns of symptoms expression, with females manifesting symptoms such as body image distortion, loss of appetite and weight loss and males exhibiting symptoms such as social withdrawal, insomnia and work inhibition.

A study by Stapley & Haviland (1989; details discussed previously) also raises questions in regard to gender biases of self-report inventories such as the BDI and RADS. They investigated gender differences in normal emotions of 262 adolescents aged 11 through to 17 years and reported significant gender differences in emotional experiences and situations in which emotions occurred. They suggest that the depression scales do not contain sufficient items which are sensitive to the male emotional experience.

Clearly further research is needed in this area. As Baron & Campbell (1993) note such research needs to examine whether gender differences in depressive symptomatology are attenuated when femininity is measured and statistically controlled for. Campbell et al (1992) note that findings such as these have important implications for clinicians and researchers by suggesting that caution must be exercised in interpreting depression scores. Although males and females generally interpret items in the same way, it is apparent that females are more likely to endorse items, even when their

levels of distress are low. Thus is may be necessary to interpret depression scores on the basis of different norms for males and females.

3. INTERVIEWS

Interviewing children and adolescents, includes the self-report of depressive symptoms but also allows the clinician to obtain far more information than can be gained from self-report alone. Detailed evaluation and probing of children's symptoms is possible and as the clinical interview is individualised it can also accommodate developmental and cognitive limitations in children (Kovacs, 1986). Several structured and semi-structured interviews have been developed to examine depression and concomitant problems in children and adolescents. These include interview schedules such as the Schedule for Affective Disorders and Schizophrenia for School-aged Children (K-SADS; Chambers, Puig-Antich, & Tabrizi, 1978), Interview Schedule for Children (ISC; Kovacs & Beck, 1988), the Children's Affective Rating Scale (CARS; McKnew & Cytryn, 1979) and the Diagnostic Interview Schedule for Children (DISC; Costello, Edelbrock, Kalas, Kessler, & Klaric, 1982).

Structured interviews typically consist of a sequence of questions presented in a semi-structured or totally structured form. Gutterman, O'Brien, & Young (1987) note that there is a general consensus that the lower age limit for these interviews is 6-8 years of age and the upper age limit is 16-18 years. All of the structured interviews require that information is gathered from both the child and a parent, however, the approach to gaining and intergrating this information is variable. There is also considerable variability in the range of items included in the interview schedules and in regard to interval of time assessed, with some instruments covering two separate periods of time (e.g. K-SADS-P) while others record symptoms reported during the past 6 months (e.g. DISC). Although there is a lack of research on the psychometric properties of structured interviews for children and adolescents there is increasing evidence that several of the interview schedules have "good or moderately good reliability" (Gutterman, et al., 1987). Further validation work examining intercorrelations between interviews and other measures is currently needed (Kazdin, 1981b). No specific interview schedule has emerged which is commonly used in the literature.

(1) Problems With Interviews

Although structured and semi-structured diagnostic interviews provide a relatively valid and reliable method for gathering data on depression in children and adolescents few studies exist which utilise interview schedules to assess gender differences in depressive symptoms. Moreover, no studies exist which utilise interview schedules to investigate gender differences in depressive disorders in children and adolescents. This is the case for either community or clinical samples. This situation appears to reflect the state of affairs in the investigation of depression in young people in general (Roberts, et al., 1990). As a consequence, nothing is known about the effects of gender on the various interview schedules.

Although clinician assessment and diagnostic interviews are often thought to be preferable to self-reports and parent-reports, they are not free from problems. Nolen-Hoeksema & Girgus (1994) for example, has noted that clinicians may also be "exposed to small samples of children's behaviour and thus may use idiosyncratic criteria and thresholds in evaluating behaviour." Arguments that children may not be able to self-report depressive symptomatology also apply to interviews, however, in her review of the use of the clinical interview for the diagnoses of depression in children and adolescents Kovacs (1986) concluded that it was important to directly interview the child or adolescent as considerable pertinent information could be gained. She also noted, however, that young children up to the age of 8 years or so, had considerable difficulty in regard to reporting some key symptoms (e.g. affect & guilt) required for DSM-III diagnosis of major depressive disorder. Making diagnostic decisions based on discrepant information from child and significant others is also problematic (discussed below).

4. OTHERS REPORTS

4.1 PARENT AND TEACHER REPORTS

A variety of parent and teacher checklists have been developed to assess depressive symptoms in children and adolescents. Examples of these include the Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983a), the Conners Parent Questionnaire (Conners, 1973) and the Quay-Peterson Revised Behavior Problem Checklist (Quay & Peterson, 1983). Teacher checklists include the Conners Teacher Questionnaire (Conners, 1973) and the Teacher Report Form (TFR; Achenbach & Edelbrock, 1986).

Typically these measures are designed to assess a wide range of internalising and externalising problems in addition to depression. Thus they are more often used to assess depressive syndromes rather than depressed affect or depressive disorders.

(1) Problems With The Reports Of Others

Parent and teacher reports are not commonly utilised in the research on gender differences in depression in children and adolescents. Thus, very little is known about the effect of gender of these instruments. In regard to the assessment of depression in children and adolescents there is a substantial amount of evidence to indicate that there is low correspondence between child-parent and adolescent-parent ratings of depression. Angold, et al (1987) for example, administered the K-SADS-E to children and parents from families containing a proband parent who had previously been depressed or who were "normal". They found that parental report of depressive symptoms in children were relatively insensitive measures if the child reports were taken as criterion, but that they showed specificity. More specifically, they found that if the parent reported that their child had depressive symptoms then the child was likely to also report the presence of depressive symptoms. Similarly, if the child denied the presence of depressive symptoms then the parent was unlikely to report its presence. Conversely, when children said depressive symptoms were present their parents often disagreed and when parents said symptoms were absent their children often disagreed. A number of other researchers have reported low correlations between parent-child reports and parent-adolescent reports of depressive symptoms (e.g. Leon, Kendall, & Garber, 1980; Kazdin, Esveldt-Dawson, Unis, & Rancurello, 1983; Salyor, Finch, Baskin, Furey, & Kelly, 1984; Tesiny & Lefkowitz, 1982). Fendrich, Weissman, & Warner (1991) looked at the long-term recall of major depression in children and adolescence who had lifetime history of major depression (DSM-III). They reported that both mother's and children's recall of major depression was good, although mother's recall was more reliable than their children. Mother-child agreement on major depression improved at the 2-year follow-up. Overall, Fendrich, et al (1991) concluded that, although children demonstrated good recall, parents were more reliable than children. It is not clear from the literature whether children-parents reports have lower correlation or whether adolescent-parent reports do. Some studies have reported lower agreement between adolescent and parent reports of depressive symptoms than child and parent (Rutter, Graham, Chadwick, & Yule, 1976), while other researchers have reported that both mother-child

and clinician-child agreement increased as a function of the child age, at least to age 16 years (Renouf & Kovacs, 1994).

Information obtained from a parent must be evaluated with care as it cannot be assumed that such information is objective and based solely on the child's functioning. There is substantial evidence to indicate that maternal perceptions of their child's status are related to maternal psychopathology, especially anxiety and depression, and also to marital discord, stressors and social support outside the home (Kazdin, 1988b). There is evidence that depressed mothers report more depressive symptoms in their children than their children self-report (Renouf & Kovacs, 1994). In regard to teachers, a number of studies have reported that teachers are insensitive to "internalising" disorders, such as depression, in children and tend to focus on conduct or aggression problems (Costello & Angold, 1988).

4.2 PEER RATINGS

Peer ratings have also been used to assess gender differences in depressive symptoms in children and adolescents. It is thought that many depressive symptoms such as dysphoric mood, loss of energy and anhedonia are likely to be detected more easily by peers. Lefkowitz & Tesiny (1980) for example, has developed a peer rating scale specifically designed for ascertaining an individual's perception of depressive symptomatology in their peers; The Peer Nomination Inventory for Depression (PNID). Although commonly used, the PNID has some limitations. It depends on being administered to a group of individuals who know each other reasonably well. As Kazdin (1981) notes for clinical settings, no single stable peer group is likely to exist to provide comparable information among children. Although peer rating scales can be used to assess a large range of behaviours across many different settings, which is a distinct advantage over self-report and interview techniques, the reliability of information gained from siblings is not known (Costello et al 1988). Costello et al (1994) note that some studies of peer ratings of sociometric status have been carried out (e.g. Lefkowitz & Tesiny, 1980), however, they have not proved markedly informative for depressive symptomatology.

Achenbach, McConaughy, & Howell (1987) has conducted a meta analyses to determine the degree of consistency between different informants. These included reports from parent, self-report, teacher, mental

health worker & peer in regard to the behavioural and emotional problems of children age 1.5 years to 19 years. They found that child and parent evaluation of child behaviour showed relatively low agreement (mean *r* =0.25). Correlation between child and teacher (mean r = 0.20) and child and mental health worker reports (mean r =0.27) were also low.

(1) Gender Differences

Not much is known about 'others' reports of depressive symptoms in children and the effect of gender. In their study, Angold et al (1987, discussed previously) found that boys reports of depressive symptoms agreed more highly with their parents' reports about them than did girls' reports. Contrasting results to those reported by Angold et al (1987) were found by Jolly, Wiesner, Wherry, Jolly, & Dykman (1994). They conducted a study to assess the influence of gender on the comparability of self and observer ratings of both depression and anxiety. Subjects were 75 adolescent inpatients aged 12 years through to 17 years who had a variety of DSM-III-R diagnoses (12% major depression, 14.6% dysthymia, 4.0% anxiety disorder, 24.0% oppositionality, 14.6% adjustment problem, 10.6% other problems). Depression was measured with the Hamilton Rating scale for Depression-Revised; Riskind, Beck, Brown, & Steer, 1987) and the Beck Depression Inventory (Beck & Steer, 1987). Anxiety was measured with the Hamilton Rating Scale-Revised (HARS-D; Riskind, et al., 1987) and the Beck Anxiety Inventory (BAI; Beck, Brown, Epstein, & Steer, 1988). Jolly et al (1994) reported that adolescent girls self-reports of anxiety and depression demonstrated reliability and concurrent validity and were comparable to observer ratings of both anxiety and depression. In contrast, only adolescent boys self-report of anxiety symptoms demonstrated concurrent validity and were comparable to observer ratings. Boys did not self-report fewer depressive symptoms than girls, however, they were perceived as being less depressed by observers. Interpretations of the results of this study are limited by the small number of subjects. In addition, only a small percentage of the subjects had DSM-III-R diagnoses of depression or anxiety. Jolly et al (1994) also note that they followed the clinical measures with self-report measures thus there may have been a tendency for adolescents to report increased agreement between observer and self-ratings.

Overall, it appears that the agreement between child-other and adolescent-other reports of depressive symptoms is low. Presently it is unclear whose reports are most predictive of problems, although it is likely that subjective self-report of depressive phenomenology are more correct

than objective parental or teacher reports. Achenbach et al (1987) note that it is important to take account of the perspectives of different informants as low correlations between informant may indicate that behavioural symptoms may differ across situations, rather than the informants reports are invalid or unreliable. Similarly, the information from different informants may represent different types of information. Parent reports for example, have been shown to correlate with social behaviour and affect-related expression (Kazdin, Esveldt-Dawson, Sherick, & Colbus, 1985). Peer reports tend to correlate with popularity (Tesiny & Lefkowitz, 1982), while teacher reports appear to correlate with academic performance (Tesiny, Lefkowitz, & Gordon, 1980). Other researchers, however, have suggested that differences between self- and other-reports may be due to denial and under-reporting by children on self-report inventories (e.g. Kazdin, 1988b). To assess the information gained from a particular type of informant it is important to have normative reference points based on what such informants typically report for normative samples of children (Achenbach et al, 1987).

5. MEASUREMENT OF OTHER CONSTRUCTS

A variety of assessment instruments have been developed to measure other constructs, thought to be associated with gender differences in depression. These include assessment of self-evaluation, social interaction, social skills, body image, negative life events, personality traits, attributional style and biological correlates. Typically these constructs are assessed with specifically designed self-report inventories and, consequently, are subject to many of the problems discussed in regard to assessment of depression. These inventories vary in the breadth and specificity of the construct they assess, in the sources of information upon which they rely and in their psychometric qualities (Compas, et al., 1993). Tables 4, 5, and 6 provide a brief overview of all the instruments used to assess constructs thought to be associated with the gender difference in depression.

6. SUMMARY

It has been suggested by some writers (e.g. Kazdin, 1981a) that the availability of several measures to assess depression in children and

adolescents cannot be interpreted as meaning than the assessment techniques for measuring depression in this area are well developed. Overall, much more research needs to focus on the reliability and validity of existing assessment techniques. Measures currently available assess depressive symptoms in children 6 years and older, research needs to focus on developing assessment methods for depressive symptoms and depressive disorders in younger children.

The emerging consensus appears to be, that, as depressive symptoms are largely subjective phenomena it is essential to gain information directly from the child. Given the uncertainties in regard to children's ability to self-report depressive symptoms it is also important that multiple sources of data are obtained. Unfortunately this is not the case in the majority of studies investigating gender differences in childhood and adolescent depression. These studies tend to rely solely on one or two measures of self-reported depressive symptoms or on parental report, both of which are assessed at one point in time. As well as the use of self-report inventories, clinical interviews, parent, teacher and peer reports are also needed. It is likely that each of these would make different contributions to the validity of the assessment process. Information from multiple informants is not without its problems however, the clinician is faced with reconciling discrepant information from a number of sources and currently it is not clear where the weight of clinical decision making should be placed. To date there has been very little empirical work assessing the relation between either clinical diagnosis, children self-reports, teacher, parent or peer ratings. (Roberts, et al., 1991; Costello et al, 1988).

Techniques which tap other modalities, such as non-verbal assessment techniques, need to be explored and developed. Kazdin (1981) for example, notes that a growing body of literature recognises the importance of non-verbal behaviour for distinguishing psychopathology, both in adults and children (e.g. Argyle, 1967; Wolf & Chess, 1964 cited in Kazdin, 1981). Non-verbal assessment is likely to be less intrusive and subsequently less likely to suffer from response bias than self-reported data. The coding of non-verbal behaviours accompanying verbal reports could be used concurrently. Similarly the potential of psychophysiological assessment and observations of overt behaviour of depressive phenomena also needs to be examined and developed. These areas have been explored in adults but currently wait to be fully extended to children (Kazdin, 1981). It is possible that factors such as the cost, time and experience involved in the use of techniques which tap

other modalities may limit their use, however, this should not be viewed as a reason for not exploring their potential.

Several issues need to be considered when considering self-report of childhood depression. Language and cognitive skills at different age levels are likely to effect the interpretation of questions and the child's responses. Severity of depression and cognitive functioning are also likely to influence the type of information that can be obtained through self-report (Kazdin, 1981). Clearly, tools for assessment need to take account of differences in developmental level, symptomatic expression, cognitive and reporting abilities between individuals of different ages. None of the existing instruments used in the research on child and adolescent gender differences in depression take into account age or developmental level of the child, rather most of the scales span considerable age ranges. Scores for a 7 or 8 year old, however, are not likely to be equivalent to scores for a 15 or 16 year old. A consequence of this is that these instruments are insensitive to age-specific phenomena that may impact on the accuracy of the assessment process. Researchers need to investigate further, how children of different developmental levels interpret and respond to rating scales.

Researchers need to be more explicit as to whether the purpose of individual assessment tools is to measure depression as a symptom, syndrome or a disorder. No one scale can fulfil all these purposes although this has been either implicitly, or explicitly expected in much of the research to date. Measures currently available to assess childhood depression are often used for dual purposes. They are used to assess which and how many depressive symptoms a child is experiencing, and are also used, with criterion scores, to diagnose the presence or absence of a depressive syndrome so as to differentiate a group of symptomatic children from the rest of the community (Kazdin, 1981a). Little attention has been paid to the fact that these two functions require different psychometric properties. Costello & Angold (1988) notes that if the purpose of the research is to assess the content of the depressive syndrome then the instrument chosen to accomplish this should cover all phenomena that clinical literature suggest are associated with childhood or adolescent depression. In contrast, if the purpose is to discriminate depressed children from nondepressed children then the most appropriate screening instrument will consist of items that best predict "caseness". Costello et al (1994) has suggested a number of principles to assist in the selection of assessment instruments. Firstly, the scales utilised should meet the requirements of the study being planned i.e.

exploration of depressive symptomatology versus screening for DSM-IV diagnoses. Secondly, the instrument selected should be comparable with those used in other similar research so as to enhance potential for generalisation. Alternatively, more than one measure should be used. Finally, Costello et al (1994) suggests that when designing research more effort should be focused on clarifying the criterion for "caseness" including clearly specifying cut-off points where applicable.

The potential influence of gender on assessment instruments and methods in children and adolescents has not been considered in the literature. If considered at all a gender analysis has been included as part of larger study. This is a major oversight and may have important implications for both assessment and diagnosis of depression. Methods of symptom identification for example, have the potential to produce a gender bias in the way children and adolescents respond to items. There has also been some suggestion that self-report inventories of depressive symptoms such as the RADS and BDI are more characteristic of depression in females rather than males (Baron et al 1993). The number of items tapping different symptoms or disorders included on a measure may partially determine whether more boys or girls are diagnosed with depression. Clearly further research is needed in this area. A variety of other constructs thought to be linked to gender differences in depressive symptoms in children and adolescents have been investigated. These have been assessed with a variety of different instruments with varying psychometric properties. In combination with the often unclear and varied conceptualisation of depression as a symptom, syndrome or disorder this has meant that research on gender differences in depression is fragmented and largely incomparable. These short-comings are a significant impediment to the exploration of gender differences in depression.

TABLE 1.
Self-rating Scales Used To Assess Gender Differences
In Depression In Children And Adolescents

Instrument	Source	Description	Comment
Beck Depression Inventory (BDI)	Beck, Ward, Mendelson, & Erbaugh (1961)	21 item, 0- to 3 point scale. Measures state depression. Scores can range from 0-63. High scores indicate more severe depression.	Requires at least 5th grade reading level Heavily weighted toward cognitive functions.
BDI short form	Beck & Beck (1970)	13 items, 0-4 point scale Scores range from 0 to 39. Assesses level of depression.	Derived from original BDI Reliability= .88
Center for Epidemiological Studies Depression Scale (CES-D)	Radloff (1977)	20 item, 0- to 4-point scale. Measures severity of depression. Possible scores range 20-80.	Derived from adult scale. Age range 6-17
Children's Depression Inventory (CDI)	Kovacs (1982)	27 item, 0- to 2-point scale. Measures severity of depression.	Derived from Beck Age range 6-17
Dimensions of Depression Profile for Children and Adolescents	Harter & Nowakowski (1987)	Questionnaire consisting of scales tapping dimensions of depression: mood, self-blame, self-worth, level of energy, feelings of hopelessness, suicidal ideation. Scores range from 1 to 4. Higher scores indicate more negative feelings.	Reliability= .72 to .86.
Emotional Tone scale	Offer, Ostrov, & Howard (1977)	10 items, 6-point Likert-type scale. Measure of sad & anxious affect.	1 of 9 scales of from Self-Image Questionnaire for Adolescents (SIQA). Reliability =.81 to .85.
General Health Questionnaire	Goldberg (1972)	Psychiatric screening instrument, for use in community. Provides measure of depression. Subjects rate the extent to which they have experienced a variety of depressive symptoms.	Several versions exist, with varying number of items.
Kandel Depression Scale	Kandel & Davies (1982)	6 item, 5-point Likert-type scale. Measure of depressed mood in past year.	Reliability not reported.

TABLE 1. (continued)
Scales Used To Assess Gender Differences
In Depression In Children And Adolescents

Instrument	Source	Description	Comment
Mood and Feelings Questionnaire (MFQ)	Costello & Angold (1988)	32-item questionnaire designed to screen symptom areas specified by DSM-III-R for MDD. 3-point scale.	Specificity increases as age increases.
Reynolds Adolescent Depression Scale (RADS)	Reynolds (1987)	30 items, 0- to 4-point scale; 4 most severe. Measures severity of depression. Total scores can range from 30-120.	Age range 13-18. Item content reflects depressive symptomatology as defined by the DSM-III. Good reliability and validity (.71 to 96).
Todai Health Index (THI-D)	Aoki, Suzuki, & Yanai (1974)	Multidimensional questionnaire to assess physical and mental health. 130-item with 12 scales, 3-point scale. Lie scale added to assess social desirability.	Depression scale consists of 10-items. Reliability= .85.
Youth Behavior Profile	Achenbach & Edelbrock (1983)	11-item, 3-point Likert scale. Possible scores range from 0-22.	Depressed-Withdrawal Scale of Youth Behavior Profile, developed from Child Behavior Checklist.
ZUNG Self-rating Depression Scale	Zung (1965)	20-item, 4-point scale. Measures broad range of depressive symptomatology.	Reliability adequate.

TABLE 2.
Interviews And Clinical Rating Scales
Used To Assess Gender Differences
In Depression In Children And Adolescents

Instrument	Source	Description	Comment
Bellevue Index of Depression (BID)	Petti (1978)	40 items each rated on 4-point scale of severity and 3-point scale of duration	Items derived from Weinberg criteria. Interview can be given separately to child, parent or others. Age range 6-12 years
Brief Psychiatric Rating Scale for Children (BPRS-C)	Overall & Pfefferbaum (1982)	21-item scale; each item represents symptoms; rated for severity on 7-point scale (0=not present & 6=severe)	Adapted from 63-item Children Psychiatric Scale (Guy, 1976)
Childrens' Depression Rating Scale (CDRS)	Poznanski, Cook, & Carroll (1979)	17 items. Severity on 14 of items are rated 0-7. Severity on 3 of items rated from 0-5. Scores range from 0-113 with higher score indicating severer depression.	Modelled after Hamilton Depression Rating Scale. Ratings based on multiple informants' information.
Diagnostic Interview Schedule for Children (DISC)	Costello, Edelbrock, Kalas, Kessler, & Klaric, (1982)	Structured interview for use with non clinical samples. Assessed symptoms organised under syndromes. Most rated on 3-point scale (absence, moderate, severe).	Highly structured. Developed for epidemiological studies. Age range 6-18 years
Teenager or Young Adult Schedule (TOYS)	Gittelman, Mannuzza, Shenker, & Bonagura (1985)	Epidemiological interview based on NIMH Diagnostic Interview Schedule	Reliability not reported.
Schedule for Affective Disorders for School-Age Children	Chambers, Puig-Antich, & Tabrizi (1978)	Items cover several disorders based on RDC criteria. Symptoms rated for degree of severity. Parent & child are interviewed	Modelled after adult SADS. Age range 6-16 years
Schedule for Affective Disorders and Schizophrenia (K-SADS-E)	Puig-Antich (1980)	Semi-structured diagnostic interview from which RDC and DSM-III diagnosis of MDD and RDC minor depressive disorder can be made.	Good reliability and validity.

TABLE 3.
'Other' Rating Scales Used To Assess Gender Differences
In Depression In Children And Adolescents

Instrument	Source	Description	Comments
Child Behavior Checklist (CBCL)	Achenbach & Edelbrock (1983)	113 behaviour problems rated by a parent on a scale from 0-2. Measure of internalising and externalising behaviour problems.	Compare child's status relative to another child of same sex & age.
Parent Form of the Childrens' Rating Scale (P-CDI)	Garber (1983)	Measure childrens' depression completed by parents.	Modelled after CDI. Items are reworded & 8 items included at end of scale to ask parents to respond with their own feelings.
Peer Nomination Inventory for Depression (PNID)	Lefkowitz & Tesiny (1980)	Peer nominations rating for 13 depression, 4 happiness, and 2 popularity roles.	
Psychiatric Institute Depressive Mood Inventory (PI-DMI)	Kandel (1983)	6-item scale, 3-point scale. Mother asked to rate child's symptoms. Possible scores range from 6 to 18.	Adequate interitem reliability.

TABLE 4.
Self-Report Inventories Used To Assess Variables Thought To Be Associated With Gender Differences In Depression In Children And Adolescents

Instrument	Source	Description
Adjective Q-sort (AQ)	Block (1978)	43-items tap self descriptions & self ideal. Congruency between self- description & ideal thought to be estimate of individuals self-esteem. High correlation equals high self-esteem.
Body Experience Scale	Rierdan, Koff, & Stubbs (1989)	14 word pairs defining the positive & negative poles on 7-point scales, along which the subject rates their experience of their body. Lower scores indicate positive body experience. Reliability .71
Body Parts Satisfaction Scale	Berscheid (1973)	Subjects asked to rate how satisfied they are with 24 specific body parts. Reliability= .75
Body-Self Relation Questionnaire	Winstead & Cash (1984)	140-item self-report questionnaire. Subjects asked to rate items concerning their physical appearance, fitness and health. Reliability= .78 to .85.
BEM Sex Role Inventory (BSRI)	Bem (1974)	60-item questionnaire, 7-point Likert-type scale. Measure of sex role identity.
Body Cathexis Scale-modified form	Secord & Jourard (1953)	17-item scale. Subjects indicate degree of satisfaction with 17 aspects of their body on 5-point scale. Lower scores indicate satisfaction. Derived from original 46-item instrument. Internal consistency= .88
California Achievement Test (CAT, forms E & F)	Wardrop (1989)	Standardised achievement battery. Subtest in form E & F cover verbal (reading, spelling & language) and quantitative topics (computation, concepts and applications). Internal consistency for all scales exceed .90.
Childhood Social Network Questionnaire	Chan & Perry (1981)	11-item. Measure of peer social support. Reliability = .92
Children's Nowicki-Strickland Locus of Control Scale	Nowicki & Strickland (1973)	20-item scale. Measure of locus of control. Reliability= .75.
Children's Attributional Style Questionnaire (CSAQ)	Kaslow, Tanenbaum, & Seligman (1978)	48-item. 6 subscales. Assesses attributional style. Hypothetical event with 2 possible explanations.
Differential Emotions Scale (DES)	Izard, Dougherty, Bloxom, & Kotsch (Unpub)	Measure of individual's subjective experience of 10 fundamental emotions based upon differential theory. Provides frequency, intensity & duration of subjective emotion experience. Validated for children as young as 8 years of age.

TABLE 4. (continued)
Self-Report Inventories Used To Assess Variables
Thought To Be Associated With Gender Differences
In Depression In Children And Adolescents

Instrument	Source	Description
Elicitors of Emotions Questionnaire (EEQ)	Stapley & Haviland (Unpub)	Assesses context of experiences on ten fundamental emotions in DES. EEQ is a free-response questionnaire.
Emotionality, Activity, Sociability Scale (EAS)	Buss & Plomin (1975)	20-items; 5-point scale. High scores indicate greater level of the dimension. 3 subscales. 3 forms for completion by child, parent, teacher. Measure of behavioural style. Adequate reliability & validity reported.
Family Environment Scale (FES)	Moos & Moos (1981)	40-item short form. Provides scores on 10 variables such as cohesion, expressiveness, control, conflict.
Global Negative Self-Evaluations (GSE)	Alsaker & Olweus (1986)	6-item; 6-point scale Likert Scale. Measure of global self-evaluation. Adequate internal consistency & reliability. Range= .80 to .88.
Life stress Index	Coddington (1972)	Designed for individuals 6 years and older. Quantify environmental stress individual has had to cope with in recent past.
Imaginary Audience Scale (IAS)	Elkind & Bowen (1979)	Measure of 2 aspects of adolescent's imaginary audience. The Abiding Self subscale measures self-consciousness in self-disclosing situ. The Transient Self subscale measures self-consciousness in temporary embarrassing situ. Subject presented with 12 brief vignettes. Internal consistency range .62-.87; adequate validity.
Major Life Events Inventory	Allgood-Merten, Lewinsohn, & Hops (1990)	Matrix of 14 major events experienced by persons important to the adolescent. Subjects asked to check which of 69 events occurred during the past year. No reliability reported.
Mastery Scale	Pearlin & Schooler (1978)	7-item scale, score 5-point Likert scale. Measure of how much individual's perceive themselves to be in control of their own lives. Reliability reported .68
Multidimensional Personality Questionnaire (MPQ)	Block (1978)	11 scales measuring primary personality dimensions (well-being, social potency, achievement, social closeness, stress reaction, alienation, aggression, control, harm avoidance, traditionalism, absorption). Scales have good internal consistency. Also contains 6 validity scales.
New Personal Fable Scale (NPFS)	Elkind & Bowen (1979)	46-item; assess 3 dimensions of personal fable construct (personal uniqueness, omnipotence, invulnerability); 5-point Likert-type scale; Higher scores indicate heightened sense of personal fable. Internal consistency range .53 to .72; Adequate validity

TABLE 4. (continued)
Self-Report Inventories Used To Assess Variables Thought To Be Associated With Gender Differences In Depression In Children And Adolescents

Instrument	Source	Description
Offer Self-Image Questionnaire, Body Image Scale (OSIQ)	Offer, et al (1977)	130-item self-report inventory for adolescents. Consists of 11 subscales including Body image subscale which contains 9-items. Subjects rate extent to which they agree with statements. Reliability= .74.
Parental Attachment Questionnaire (PAQ)	Kenny (1987)	55-item, scored 5-point Likert-type scale. Measure of security of attachment for use with adolescents. Contains 3 scales; Affective Quality of Attachment, Parental Fostering of Autonomy and Parental Role in Providing Emotional Support. Reliability= .83 to .92.
Personal Attributes Questionnaire (PAQ)	Spence & Helmreich (1978)	24-items each of which consist of a pair of bipolar descriptors linked to a 5-point scale. Measure of sex-role attributes. Provides separate measures of femininity & masculinity.
Perceived Competence Scale for Children	Harter (1982)	28-items, 0-4 scale Items categorise individ. into two opposite types. Subjects asked to choose which group they are most like. Measure of social, cognitive & physical competence & general self-worth.
Perceived Emotional/ Personal Support Scale (PEPSS)	Slavin & Rainer (1990)	Measure of emotional support for use with adolescents. 3 subscales; family members, nonfamily adult, friends. 4-point Likert scale.
Perceived Instability of Self (PIS)	Alsaker & Olweus (1986)	Modified version of Rosenberg Stability of Self-Scale (Rosenberg, 1979). Includes 4 items of 5 items of Rosenberg scale. Satisfactory internal consistency (.80 to .89)
Response Style Questionnaire	Nolen-Hoeksema, Morrow, & Fredrickson (1993)	Measure of way in which subjects typically cope with feelings of depression. Based on Nolen-Hoeksema, Girgus, & Seligman (1991) Response Styles theory of depression. Includes items which tap ruminative & distractive responses. Subjects asked to circle a response, on 4-point scale to indicate what they generally do when feeling down, sad or depressed.
Revised Kaplan Scale	Turner (1983)	Measure of social support. 9 vignettes describing individual experiencing different level of support. Subjects asked to rate themselves on 5-point scale ranging from low to high support.

TABLE 4. (continued)
Self-Report Inventories Used To Assess Variables
Thought To Be Associated With Gender Differences
In Depression In Children And Adolescents

Instrument	Source	Description
Revised UCLA Loneliness Scale (R-ULS)	Russell, Peplau, & Cutrona (1980)	20-item questionnaire assessing satisfaction with social relationships. Subjects indicate how often they feel a particular way by circling a number from 1 (never) to 4 (often). Scores range from 20-80 with higher scores indicating loneliness. Reliability= .89.
Rosenberg Self-Esteem Inventory	Rosenberg (1979)	10-item scale. Measure of self-esteem. Subjects asked to rate their agreement with 10 statements. Reliability= .88.
Parental Bonding Instrument	Parker (1983)	Measure of subject's perception of the degree to which their parents care about them & extent to which they perceive their parents as overprotective. 4-point scale.
Sociotropy and Autonomy Scale (SAS)	Beck (1983)	30-item, score 5-point Likert scale. Personality dimensions. Sociotropy Scale measures factors such as interpersonal dependence and Autonomy Scale measures factors such as independence.
Self-Consciousness Scale (SCS)	Burnkrant & Page (1984)	18-item scale. Measure of self-consciousness. Subjects asked to rate the extent to which statements describe them. Reliability= .60 to .80
Self-Perception Profile for Adolescents (SPPA)	Harter (1988)	40-items which assess 8 specific domains of perceived competence and global perception of self-worth. Subjects rate each item as either "sort of true for me" or "really true of me". Reliability= .77 to .91.
State-Trait Inventory (STAI) Form Y	Spielberger, Gorsuch, & Lushene (1970)	20 statements that describe how respondent "feels right now at this moment". Evaluates feelings of apprehension, tension, nervousness and worry. Reliability= .58 to .88.
Weinberger Adjustment Inventory-Denial of Distress Scale (WAI-DD)	Weinberger & Schwartz (1990)	11-items designed to measure denial of distress. Subjects indicate the degree to which each item describes the way they usually feel or have been like over the past year by circling number from 1 (false) to 5 (true). Higher scores indicate greater denial. Reliability= .77 to .84.

TABLE 5.
Others-report Inventories Used To Assess Variables Thought To Be Associated With Gender Differences In Depression In Children And Adolescents

Instrument	Source	Description
Child Behavior Checklist (CBCL)	Achenbach & Edelbrock (1983)	113 behaviour problems rated by a parent on a scale from 0-2. Measure of internalising and externalising behaviour problems. Compare child's status relative to another child of same sex & age.
Emotionality, Activity, Sociability Scale (EAS)	Buss & Plomin (1975)	20-items; 5-point scale. High scores indicate greater level of the dimension. 3 subscales. 3 forms for completion by child, parent, teacher. Measure of behavioural style. Adequate reliability & validity reported.
Peer Assessment Instrument (PAI)	Pekarik, Prinz, Leibert, Weintraub, & Neale (1976)	Modified version of the Revised-Pupil Evaluation Inventory. 10-items used in PAI based on their relevance to 4 constructs (aggressiveness, social contact, likability and affect). Descriptor read to class & child asked to circle picture(s) of children who fit the descriptor. Reliability not reported.

TABLE 6.
Interview Or Clinician Rated Scales Used To Assess Variables Thought To Be Associated With Gender Differences In Depression In Children And Adolescents

Instrument	Source	Description
Severity of psychosocial stressors scale from DSM-III-R -modified	APA (1987)	Modified version of Severity of Psychosocial Stressors Scale from the DSM-III-R. Scale was expanded from 6-point scale to 10-point scale with ratings from "none" to "catastrophic".
California Adult Q-sort (CAQ)	Block (1978)	100 statements describing personality, cognitive & social characteristics. Clinician rated. Moderate reliability.
Teacher Observation of Classroom Adaptation-Revised (TOCA-R)	Werthamer-Larsson, Kellam, & Wheeler (1991)	Structured interview with the teacher, who is asked to respond to 36 items pertaining to the child's adaption over the last 3 weeks to classroom task demands. Adaptation is rated on a 6-point scale & covers 3 factor analytically derived dimensions: concentration problems, authority-acceptance/aggression & shy behaviour. Reliability= .60 to .95.

SECTION 3

EPIDEMIOLOGY

CHAPTER 8

EPIDEMIOLOGY OF DEPRESSION AND DEPRESSIVE SYMPTOMATOLOGY IN CHILDREN AND ADOLESCENTS

1. INTRODUCTION

In general, there is a paucity of epidemiological research on childhood depression. This is due, in part, to the long-standing debate on the existence of depression in this age group. The majority of epidemiological studies have employed samples of school-age children and adolescents, consequently, there is very little epidemiological information on depression in pre-school children. There appears to be general agreement in the literature that rates of depression increase in adolescence as compared to childhood. There is also a general consensus that there is a switch in the gender ratio of depression around the time of adolescence. Before puberty there is a slight tendency for males to be more often depressed than females, however, during adolescence females are twice as likely as males to be depressed. There is less consensus in the literature as to exactly when this switch in gender ratio occurs, when it reaches its peak and what causes it.

The following section is a critical review and summary of selected epidemiological studies in this area. Most of the studies reviewed here include information about the recent past (usually the past 6-12 months) and about current levels of functioning (see table 7 for definition of prevalence of terms). The research is grouped and discussed according to whether the studies examine depressive symptoms or depressive disorders in community samples of children or adolescents. A number of methodological limitations in the literature are highlighted and suggestions for future research are proposed.

TABLE 7. Definition Of Prevalence Terms

Point prevalence	Refers to proportion of people in a defined population who are affected by the disorder at a particular point in time.
Period prevalence	Defined as a proportion of people who are affected by a disorder at any time within a stated period.
Lifetime prevalence	Refers to the proportion of people who are affected by the disorder in their lifetime.
Incidence rates	Is a measure of new episodes of the disorder and it is the proportion of formerly well people who develop a disorder in a defined period of time (usually a year).

2. DEPRESSIVE SYMPTOMS

(1) Depressive Symptoms In Community Samples

A few studies employing self-report inventories have reported prevalence and severity of depressive symptoms in children and adolescents. Kashani, Holcomb, & Orvaschel (1986) for example, conducted a study to investigate depression and depressive symptoms in 109 (54 boys; 55 girls) children enrolled in two nursery schools. The age range of the children was 2.5 years through to 6 years. The evaluation consisted of several parts. The following instruments were used to evaluate the children; The Behavior Checklist, The Coddington Life Events Scale for Preschool-age Children, A depression checklist extracted from the DSM-III, The McCarthy Scales of Children's Abilities, Pictures of a Child, The General Rating of Affective Symptoms for Preschoolers and Kohn's Teacher Questionnaire. After obtaining the parent and teacher ratings the researcher interviewed nine children (5 boys and 4 girls) (8%) who were rated as moderately to severely depressed. In regard to gender differences Kashani et al did not find any significant gender or age differences however, conclusions that can be drawn from these results of this study are limited by the small sample size.

Lefkowitz & Tesiny (1985) investigated depressive symptomatology in 3,020 elementary school children between ages of 8 and 10 years. Depressive symptomatology was measured with the Peer Nomination Inventory of Depression (PNID) and the CDI. Lefkowitz et al (1985) reported that, based solely on the PNID, the point prevalence of severe depression (cut-off ≥ 4) in their prepubertal sample was 5.2%. No significant association was found

between gender and depression. The fact that the prevalence rates were based solely on the PNID is a significant limitation of this study.

Nolen-Hoeksema, Girgus, & Seligman (1991) administered the CDI to 352 third grade elementary school children (8 years) at 4 separate points over approximately 1 year. Nolen-Hoeksema et al (1991) reported that at each administration a significantly higher percentage of boys (mean= 18%) than girls (mean= 14%) scored in the moderately depressed range (≥ 17).

Worchel, Nolan, & Wilson (1987) investigated the incidence of self-reported depressive symptoms in a normal school population of 6-17 year old using the CDI (N=304). Subjects were divided into 3 groups according to age; children (6-11), young adolescents (12-14) and older adolescents (15-18). Twenty-one percent of the children reported mild to moderate levels of depression and 7% reported severe levels of depression. Worchel, et al (1987) reported that significantly more young children (13%) reported severe depression than either young adolescents (6%) or older adolescents (5%). In regard to gender differences, Worchel et al (1987) females reported overall, more depression than males. In addition, significantly more girls aged 6-14 years (12%) reported severe depression than did boys (2%). This was not the case for older adolescents (15-18).

Teri (1982) administered the BDI to 568 (340 females; 228 males) adolescents aged 14 through to 17 years. The mean BDI score for the total sample was 8.47 (SD= 8.03). Only 5% of the sample reported depressive symptomatology sufficiently high enough to be classified having severe depression. The depression scores of the majority (68%) of the sample were in the none, minimal or mild range. No significant differences were found across age and although gender was not significant across the total sample it was significant within a subsample of adolescents reporting extreme high or low levels of depression. More females were in the high depression group and more males were in the low depression group.

Kaplan, Hong, & Weinhold (1984) administered the BDI to 385 high school students whose age ranged from 11 to 18 years. Utilising a BDI cut-off 16, Kaplan et al reported a point prevalence rate of depression of 8.6%. The total percentage of adolescents with >10 on their total BDI was 22.1%. Using the cut-off point suggested by Beck to divide adolescents into groups based on severity of depression. Three hundred (77.9%) students were non-depressed, 52 (13.5%) were mildly depressed, 28 (7.3%) were moderately

depressed and 5 (1.3%) were severely depressed. Kaplan et al (1984) also reported that adolescents in the lower social class were more depressed than those in a higher social class. Younger adolescents were less depressed than older adolescents. In regard to gender, Kaplan et al (1984) did not find any significant gender between total depression scores in males and females when age and social class were controlled.

Kandel & Davies (1982) investigated the epidemiology of depressive mood in 8206 adolescents 14 to 18 years old. Depressed mood was measured with a 6-item scale developed to ask questions about mood. Kandel and Davies (1982) validated the scores on this scale with a clinical adolescent population. Using three different cut-off scores, they concluded that 15-28% of their sample was classified as having severely depressed mood. They also reported that girls reported more depressive symptoms than boys and no significant differences were found for age. Kandel and Davies (1982) also compared the scores of the adolescents and their parents and reported that adolescents reported higher depressed mood than their parents, with the differences greater in daughter-mother than son-father pairs. This study investigated one measure of depressive mood and not a depressive syndrome thus generalisations are limited.

Ehrenberg, Cox, & Koopman (1990) examined the point prevalence of depressive symptoms in 366 Canadian high school students between the ages of 13 and 19 years. These researchers reported that 31.5% of the sample were mildly to clinically depressed as measured by the BDI. Ehrenberg et al note that this rate is consistent with similar research in the United Kingdom and United States (Rutter, Izard, & Read, 1986; Kandel & Davies, 1982). In regard to gender differences, 15.1% of males and 25.3% of females were clinically depressed. A significant association was found between gender and level of depression in the middle (15.5 to 17 years) and late adolescent (17-19 years) group. In middle adolescent age group the proportion of non-depressed males (85.3%) was significantly greater than the proportion of non-depressed females (54.5%). Conversely, the proportion of mid-adolescent females exceeded that of mid-adolescent males for the mildly (29.9%F; 11.8%M) and clinically depressed (15.6%F; 2.9%M) groups. In the late adolescent age group the proportion of non-depressed males (82.0%) exceeded that of non-depressed females (57.9%), however, the proportions of males (12.3%) and females (10.0%) in the clinically depressed late adolescent group were not significantly different. These results suggest that the pattern of gender differences may not be identical for different levels of depression

over the course of depression. This study is limited by sample characteristics in this study; the majority of the adolescents were from middle- to upper-class homes. In addition this study relied on one self-report inventory to measure depressive symptomatology.

Kaslow, Rehm, & Siegel (1984) used the CDI to measure depressive symptomatology in a sample of upper middle class private school children (6-14 years). They reported that 21.3% of the sample scored above their cut-off of 11 on the CDI. This subsample consisted of 36 first graders (mean age 7.25 years), 36 fourth graders (mean age 10.17 years), 36 eighth graders (mean age 13.75 years). Kaslow et al (1984) did not report any effect of age or gender or interaction of the two.

In their study examining variables associated with depressive symptomatology in a community sample of 397 adolescents, aged 14 to 18 years, Koenig, Isaacs, & Schawartz (1994) reported that 32% of the sample were mild to clinically depressed (3% were clinically depressed). Koenig et al, 1994 also reported that girls (40%) reported significantly more depressive symptoms than boys (20%) as measured by the BDI. Thus, the ratio of depressed females to males was approximately 2:1. Koenig et al (1994) also reported that approximately two times as many girls as boys, were in each of the mild and moderate depression categories. In contrast, the percentage of boys and girls in the severe category was relatively equal, about 3% of the total sample. Koenig et al note that his percentage corresponds with epidemiological studies estimating the rate of clinical depression at approximately 2-5% of the population. Koenig et al (1994) concluded that depressive symptoms may be experienced differently by boys than girls. Boys distribution of BDI scores appeared more skewed with proportionately more subjects in the very low or very high end, relative to girls BDI distribution. Thus, although most males were not depressed a small subsample were severely depressed.

In their study investigating the adult sequelae of adolescent depressive symptoms Kandel & Davies (1986) reported that 21% of a group of 762 adolescents age 15 or 16 reported depressed symptoms as measured by the Hopkins Symptoms Checklist- 90 items (SCL-90; Derogatis, Lipman, & Covis, 1973).

In a longitudinal study of children from 6th to 12th grade (11-17 years) Peterson, Sarigiani, & Kennedy (1991) reported that overall girls showed

significantly more depressed affect and poorer emotional tone than boys by the 12th grade (17 years). Depressed affect in this study was measured with the Emotional Tone from the Self-Image Questionnaire for Young Adolescents (SIQA; Peterson, Schulenberg, Abramowitz, Offer, & Jarcho, 1984), the Kandel Depression Scale (Kandel & Davies, 1982) and the Teenager or Young Adult Schedule (TOYS; Gittelman, Mannuzza, Shenker, & Bonagura, 1985). The gender differences in depressive affect began to emerge in the 8th grade (at about 13 years of age) and increase over subsequent years. The design of Peterson et al's study does not reveal whether gender differences emerge steadily (linearly) over this period or with a curvilinear pattern.

A significant caveat of this research is that all of the studies examining depressive symptoms in community samples have been based on school children. Consequently, these samples are not representative of all children and adolesecents in the general population. For example, young people who have poor attendance, are educated at home or who have dropped out of school are excluded.

3. DEPRESSIVE DISORDERS

Epidemiological studies on children in the general and clinical population indicate that depression is very uncommon in children.

(1) Depressive Disorders With Community Samples

Kashani & Simonds (1979) studied 103 children between ages of 7-12 years old who were randomly selected from two sources. Half were selected from a family practice clinic and half were born at a medical centre. Children and parents were interviewed and depression was determined from DSM-III diagnostic criteria for affective disorders. Kashani et al (1979) reported finding an incidence of only 1.9% (2 boys of 103 children) meeting DSM-III criteria for depression. Kashani et al (1979) noted that sadness "as a distinct affect" was found in 17.6% (18 of 103) of their sample. This group showed significantly more somatic complaints, overactivity and restlessness, fighting, low self-esteem and refusal to go to school, than those subjects who did not express sadness. Kashani et al 1979 suggested that this latter group may have had a former subclinical form of depression.

Kashani (1987) conducted a study to examine the prevalence of psychiatric disorders in a school sample of 150 adolescents 14-16 years of age. The adolescent and one parent were administered the Diagnostic Interview for Children and Adolescents-Parent Version. Caseness was defined as those individuals who not only met criteria for DSM-III criteria but were also rated as needing treatment. Kashani et al (1987) reported that 41.3% of the 150 adolescents were found to have at least one DSM-III diagnosis without the criteria for impaired functioning and the need for treatment. When the additional criteria were used the point prevalence rate of 18.7%. Kashani et al reported a point prevalence rate for depression (Major depressive disorder & dysthymia) of 8.7%. There was a significant gender difference for depression with 2.7% of boys and 13.3% girls diagnosed with a depressive disorder. Any conclusions inferred from the results of this study are limited due to the small sample size. In addition, the adolescents in accrued from selected public schools, therefore do not necessarily represent all adolescents in the general population.

Kashani & Ray (1983) conducted a parental survey of 241 (128 boys; 113 girls) pre-schoolers to investigate the current point prevalence of major depression. Subjects were drawn from six different nursery schools in the general population. The age range of children was 2.5 years through to 6 years (mean=3.9 years). Parents were sent a questionnaire which asked them about symptoms of major depressive disorder (DSM-III) in their children. Kashani et al (1983) did not find one single case of major depressive disorder among the 241 children. The results of this study are limited however, in that diagnosis of depression was based solely on one data source; parental report.

Kashani, McGee, Clarkson, Anderson, Walton, Silva, et al., (1983) investigated the prevalence of depression in a sample of 9 year olds from the general population (N=955). Children in the study were from the Dunedin Multidisciplinary Child Development Study which is a longitudinal study of health, development, and behaviour of New Zealand children born between April 1, 1972 and March 31, 1973. Kashani et al (1983) screened the children for depressive symptoms with the Child Questionnaire and the Parental Questionnaire which were based on DSM-III criteria for diagnosis of major depression. Selected children were then administered the K-SADS-E which was used to diagnose major or minor depression. Kashani et al (1983) reported that current point prevalence of major and minor depressive disorder was estimated to be between 1.8% and 2.5%. 10% of the children

were reported to have suffered from a previous minor depressive episode, in contrast, only 1% were found to have had a previous major depressive episode. In regard to gender differences Kashani et al (1983) did not find any significant association between gender and depression at age 9 years. Interpretation of the results of this study is limited by a number of factors. These include the use of inefficient screening instruments for depression (The Child's Questionnaire and The Parent's Questionnaire), attrition of the sample by non-availability (for assessment) and an unrepresentative sample in that their sample was biased toward the socioeconomically advantaged.

Anderson, Williams, McGee, & Silva (1987) conducted a follow-up study of 792 (416 boys; 376 girls) of the children in Kashani et al's (1983) study at age 11 years. The measures used in this study consisted of the Structured Psychiatric Interview for Children (DISC-C) and questionnaires for parent and teacher to complete. The parent questionnaires covered the same areas as the DISC-C and teacher were completed the Rutter B scale. All DISC-C items referred to items over the past 12 months. The identification of cases depended on DSM-III criteria being met based on the three sources of information either alone or in combination. The three sources of information were analysed separately and interpreted as providing differing degrees of certainty of casesness.

Anderson et al (1987) reported an overall period prevalence or disorder of 17.6% with sex ratio (male to female) of 1.7:1. One of the least prevalent depressive disorders was depression. 1.8% of the sample were suffering from major depressive disorders or dysthymia disorder (DSM-III). The male preponderance in overall disorders also occurred in the depressive disorders with a sex ratio of 5:1 (2.5% males to 0.5% females). Of the 219 cases identified, 45% occurred as single disorders, whereas 55% occurred in combination with one or more other disorders. The category representing the most overlapping category was depression-dysthymia. Anderson et al (1987) suggest that the higher number of boys in the depressed-dysthymic group probably reflects the association of depression with other disorders, particularly ADD and conduct disorder. The gender ratio of 5 males; 1 female at age 11 years warrants explanation as no difference was reported at 9 years. It is likely that this is the result of differences in the diagnostic instruments used. Thus differences in the pattern of results were confounded with differences in diagnostic instruments. As Anderson et al (1987) did not interview parents in this study this may have compromised the identification of disorders. Anderson

et al (1987) note that an interview would have allowed parents to modify their response to questions and thus questionnaires may have overestimated problems. The prevalence of depression reported in this study is somewhat lower than those reported by Kashani et al (1983). Anderson et al (1987) suggest that the different measures used and interpretation of diagnostic criteria in the studies may account for the differences. Kashani et al (1983) diagnosed both current and past episodes of depression while Anderson et al only identified episodes within the past year. In addition, the diagnostic criteria for dysthymia are not the same for minor depressive disorder. Finally, the considerable overlap of disorders would make the prevalence of pure disorders less clear.

McGee, Feehan, Williams, & Anderson (1992) conducted a study to investigate the continuity of DSM-III disorders from age 11 to 15 years in a community sample of 750 adolescents (393 boys; 357 girls). Subjects were from Dunedin Multidisciplinary Child Development Study (see Kashani, et al., 1983; Anderson, et al., 1987). The aim of McGee et al's (1992) study was to examine changes in prevalence of disorder over time. Assessment of children at 11 years old are discussed in Anderson et al (1987). A shortened version of the DISC-C was used to assess depression in 15 year olds. Parents completed the Revised Behavior Problem Checklist. Identification of DSM-III criteria for the disorder was based on adolescents self-report and the parent measure was used to confirm this.

McGee et al (1992) reported that overall there was a increase in the prevalence of DSM-III disorders with age but many new disorders appeared in adolescence. Nine percent of the sample had one or more disorders at age 11 compared with nearly 20% by age 15 years. This increase was most salient for self-reported disorders. The two disorders that demonstrated the greatest increase from age 11 to 15 years was major depressive disorder and nonaggressive conduct disorder. The prevalence rate for major depressive episode at age 11 years was 0.5% while at age 15 years the prevalence rates rose to 2.5%. In contrast to major depressive disorder, dysthymia had a similar prevalence rate at both ages (0.9% at 11 years; 1.5% at 15 years). Overall, McGee et al (1992) suggest that a major depressive episode is relatively rare in childhood and that it tends to coexist with other disorders. By the age of 15 years, although depressive disorder in general showed high comorbidity with other disorders, major depressive disorder was much more likely to occur on its own. McGee et al (1992) suggest that these differences raise important questions as to whether a major depressive

episode in childhood is similar to late onset depressive episode in adolescence and adulthood. They note that there is little empirical evidence for a construct of major depressive episode in childhood and suggest that there is better support for a dimension of dysthymic symptoms.

In regard to gender, at age 11 years, depression, in general, showed a male predominance, whereas, by age 15 there was a female predominance. More specifically, at age 11 years the ratio was 4.3:1 males to females, whereas, at age 15 years the ratio was 0.4:1 male to female for depression. To account for this finding McGee et al (1992) note that girls are more anxious in preadolescence and remain so in adolescence and this would suggest that depressive and anxiety disorders are either qualitatively different disorders or that anxiety disorders precede depressive disorders in girls. This hypothesis needs to be tested. An alternative explanation is that these results are due to differences in methods of assessing depression used at the different ages. i.e. age and gender differences in the pattern of depressive symptomatology may have been confounded with differences in assessment instruments and methods.

Fleming, Offord, & Boyle (1989) assessed the period prevalence of depression in 2852, 6 to 16 year old children from the Ontario Child Health Study. They used the Survey Diagnostic Instrument to determine depression (SDI). The SDI asks about depressive symptoms occurring at present or in the preceding 6 months. Each item has 3 responses which identify how true that item is. Fleming et al (1989) note that as the SDI does not ask about depression in the last two weeks as required by the DSM-III, they measured what they labelled a "DSM-III-like" major depressive syndrome. The severity of symptoms required to define a 'case' was varied to generate three levels of diagnostic certainty (DC). Fleming et al (1989) noted that overall prevalence made with high DC were 0.6% for pre-adolescence and 1.8% for adolescents. Not surprisingly the prevalence rates for depression increased as diagnostic uncertainty decreased. For preadolescents aged 6-11 years the prevalence rate for medium DC was 2.7% and 17.5% for low DC. For adolescents aged 12 to 16 years the prevalence rated for medium DC was 7.8% and 43.9% for low DC. Thus depression increased with frequency in adolescence. There was some evidence to suggest that Dysthymia and minor depression may be more prevalent that Major Depressive Disorder. Fleming et al (1989) reported that utilisation of mental health and social services, comorbidity, poor school performance, problems in getting along with other and need for professional help, all

increased as diagnostic certainty increased. In regard to gender differences, Fleming et al (1989), did not find a difference for male and female preadolescents. For adolescents, a significant gender difference was only found in the low DC group. These researchers suggest that a gender effect may only be apparent for adolescents with less severe depressive symptoms, however, males and females are equally likely to report clinical depression. Consistent with the literature in this area Fleming et al (1989) found poor agreement between self-report, parents and teachers.

In their study (discussed previously) investigating depression in 109 pre-school children (2.5 years to 6 years) Kashani et al (1986) only found one child (male) who met DSM-III criteria for major depressive disorder and no children met criteria for dysthymic disorder (DSM-III). Kashani et al did not find any significant gender or age differences.

Lewinsohn, Hops, Roberts, Seeley, & Andrews (1993) investigated the point and lifetime prevalence and 1-year incidence of depression in a randomly selected samples (N=1, 710) of high school students, grades 9-12 (14-17 years). Adolescents were interviewed initially and then 1 year later. The K-SADS-E was used to assess past episodes and the K-SADS-P to assess current episodes of depressive disorder (DSM-III-R). Lewinsohn reported a point prevalence of 2.92% of unipolar depression at time 1 and 3.18% at time 2. Lifetime prevalence of unipolar depression 20.35% at time 1 and 25.27% at time 2. The increase in point prevalence at time 2 over time 1 was nonsignificant. Major depressive disorder had the highest lifetime prevalence rate followed by anxiety disorders. In regard to gender, the differences in the distribution between female and male students was significant with more females than males having at least one disorder. The prevalence rate for girls was almost twice that for boys (3.8% vs. 2.0%) (Ratio of 1.9:1). Girls lifetime was in a similar proportion compared to boys (27.2% vs. 12.9%). Lewinsohn et al did not find an age by sex interaction, suggesting that female depression was elevated even in the youngest age group. The duration of episodes of dysthymia was significantly longer for female than for male students, however, the difference in duration between males and females for major depressive disorder was not significant. First time incidence rate of unipolar depression was 5.26%. Lewinsohn et al (1993) note that biases may have been introduced into study by case ascertainment, nonresponse at time 1 and time 1-time 2 attrition (12%). Adolescents in the study were those who attended school, so did not include those who dropped out of high school or where in institutions. Thus, it is possible that

the most severely depressed adolescents were not included in the study. Lewinsohn et al (1993) relied on self-report data only to make a diagnosis with the K-SADS. Typically, however, the standard procedure for this interview schedule is to also obtain diagnostic information from a parent.

Cohen, Kasen, Velez, Hartmark, Johnson, et al (1993) conducted a study of prevalence in psychiatric disorders in a community sample of adolescents ages 10-20 years. The DISC was administered to parent and adolescents to diagnose mental disorders according to DSM-III-R criteria. In regard to depression Cohen et al (1993) reported that in late childhood (10-13 years) point prevalence rates of major depressive disorder were low (4.1%) and comparable for the two genders (male = 1.8%; female = 2.3%) and the prevalence rate remained approximately the same level throughout the adolescent years (14-16 years) for boys (1.6%). For adolescent girls (14-16 years), however, there was a very sharp increase in the prevalence of major depressive disorder in the immediate post-puberty years (7.6%). At age 14 years, the peak rate among girls was 14%. In contrast to other studies, Cohen, et al (1993) reported that the peak rate for females was 14 years and, there after, there was a decline so that in older adolescence (approx. 18-20 years) the rates of major depressive disorder were effectively the same for boys and girls. Cohen et al (1993) suggest that the prevalence rates for females can be plausibly accounted for by the triggering role of hormonal and social changes associated with puberty. They note that all the girls in their study with major depressive disorder were post menarcheal, except for two 10 year old girls. All of the depressed 14 year old girls in the study were post-menarcheal, whereas, 15% of non-depressed 14 year old girls were still prepubertal. This latter difference did not reach statistical significant levels.

Lewinsohn, Duncan, Stanton, & Hautzinger (1986) conducted a study to investigate the onset age distribution for first episodes of unipolar depression in males and females. 2,046 adults aged 18 to 88 years were selected for a diagnostic interview on the basis of elevated scores on CES-D. Diagnosis was based on the Schedule for Affective Disorders and Schizophrenia and Research Diagnostic Criteria procedures. Lewinsohn et al (1986) reported that of those interviewed 1, 012 were diagnosed with having had a previous episode of depression. The Life Table method was used to describe the risks associated with different ages for developing an initial episode of depression. Lewinsohn et al (1986) reported that the risk for developing an initial episode of unipolar depression was very low during childhood, increased dramatically during adolescence, peaked at the

middle years and decreased during the elderly years. These results are consistent with other studies which indicate that the least vulnerable ages for depression are before ages 10 and after 60 years (see Gurland, 1976) for a review). In regard to gender differences, Lewinsohn et al (1986) reported that although the overall hazard rates were elevated for females, the average age of onset for males and females did not differ. This result suggests that the elevated prevalence of depression in females cannot be accounted for by an earlier onset of first episode.

(2) Studies Investigating Depressive Disorders With Clinical Samples

In their prospective study of 1000 clinically referred pre-schoolers (1-9 years old) Kashani & Carlson, (1987) noted a point prevalence rate of 0.9% of major depressive disorder and no children received diagnosis of dysthymic disorder. Of these 9 children six were boys and three were girls. As the number of children is small, conclusions about gender differences cannot be made. The diagnosis of depression was made on the bases of both the DSM-III criteria for children under age 6 years and the adult criteria for major depressive episode. The latter being a stricter criteria. The ages of these children ranged from 2 years 11 months to 6 years and included six girls and three boys. As Kashani & Carlson (1987) note, the stricter approach they employed may well have led to underreporting. It is also likely that the sample size was too small to generate precise estimates of prevalence. Overall, this study would suggest that the major depressive disorder is very rare in pre-school children, even in a clinical population.

Kashani, Ray, & Charles (1984) evaluated depression in 100 clinically referred children between ages of 1 and 6 years (67 boys and 33 girls). The children were evaluated over a period of 2 days by a child psychiatrist and a child clinical psychologist. Parents were also seen by the child psychiatrist in a semi-structured interview and parent-child interaction was observed to obtain further information about the child. The final diagnosis of depression, according to DSM-III criteria, was made after the interviewers had agreed upon a diagnosis. Seventeen percent of parents reported their children to be unhappy most of the time, however in only 7% of the cases was there full agreement between both child and the parent. Of the 100 children only 4% met DSM-III criteria for a depressive disorder. These were 2 girls both 4 years old and 2 boys both 6 years old. Only one of these children was diagnosed with major depressive disorder. Overall, Kashani et al (1984) concluded that while it is possible that DSM-III criteria are not

appropriate for evaluating affective disorder in pre-school children the results of their study indicate that major depressive disorder as proposed by the DSM-III is rare in children under the age of 6 years.

Kashani, Cantwell, Shekim, & Reid (1982) investigated depressive disorders in 100 children admitted to an inpatient community mental health centre. The children's age range was 9-12 years. A diagnosis of depressive disorder, according to DSM-III criteria, was made by two child psychiatrists who interviewed the children with their parents. Information was also collected from mental health workers at the centre. Kashani et al (1982) reported that 13% of the children (11 boys and 2 girls) were diagnosed with major depressive disorder. Although 2 girls versus 11 boys were depressed, the prevalence among the sexes was not statistically significant (8% among girls; 15% among boys). The depressed group in Kashani et al (1982) study were significantly older (mean=11.9 years) than the nondepressed group (mean=9.9 years).

Friedman, Clarkin, Corn, Aronoff, Hurt, & Murphy (1982) examined the charts of 76 adolescents (37 males; 39 females) between the ages of 13 and 19 who had recently been discharged from a psychiatric hospital for evidence of DSM-III disorders. Diagnoses were assigned to patients on the basis of documented symptomatology and irrespective of the discharge diagnosis. Forty-five patients (59%) met criteria for an affective disorder. Of these 15 (20%) were diagnosed with major depression and 24 (32%) with dysthymia or atypical depression (i.e. dysthymia of briefer duration than 1 year). Only 14% of all patients (N=11) were diagnosed by clinicians at the time of discharge as having an affective disorder. Friedman et al (1982) did not find a gender difference in prevalence of affective disorder. The results of this study are limited by the retrospective nature and reliance on charts to make diagnoses.

A number of other studies, while providing estimates of the prevalence of depressive disorders in clinical samples of children and adolescents have not conducted a gender analysis. Feinstein, Blouin, Egan, & Conners (1984), for example, examined depressive symptomatology in a 224 child psychiatric outpatient population (4-16 years) and reported that 21% of children in the sample were diagnosed with depression. Weller, Weller, & Herjanic (1983) investigated psychiatric disorders in 121 (70 boys; 51 girls) adolescent inpatients and outpatients aged between 12 and 15 years. Ten percent of sample met diagnoses of depression according to criteria

established by Feighner, Robins, Guze et al (1972) for adult disorders. Major depressive disorder, according to DSM-III criteria, was assessed by Kashani, Venzke, & Millar (1981) in a study of 100 children between the ages of 7 and 12 years, admitted to hospital for orthopaedic procedures. Of the 100 children, 23% (9 boys and 14 girls) were diagnosed with major depression. Finally, in their study examining the correspondence of child and parental reports of depression (Kazdin, French, Unis, & Esveldt-Dawson, 1983) reported that of the 104 children (5 to 13 years) in a psychiatric hospital 19% were diagnosed with major depression.

The distinct lack of studies investigating gender differences in depressive disorders in clinical samples of children and adolescents is a significant gap in the literature. Although the epidemiological studies (see Nolen-Hoeksema, 1987 for a review) indicate that gender differences in depressive disorders are evident in clinical samples of adults, currently there is no empirical evidence to suggest that this is the case with adolescents.

4. EPIDEMIOLOGY OF DEPRESSIVE SYMPTOMS AND DISORDERS IN NON-WESTERN CULTURES

It is important to examine the rates of depressive symptoms and disorders in children and adolescents in a variety of countries and cultures to determine how universal gender differences are. As Nolen-Hoeksema (1990) notes, if gender differences in depression do not occur in certain cultures then this may provide some identification of the factors that lead to gender differences in Western Cultures. In contrast, if gender differences are apparent and similar in all cultures then this would suggest that some factor universal to all woman, or all cultures, predisposes them to depression.

Takeuchi, Roberts, & Suzuki (1994) conducted a epidemiolgic study of depressive symptoms in 8th grade (12-15 years) students in Japan (n= 570) and the United States (n=115 Anglo, n= 180 Hispanics). Depressive symptomatology was assessed with the depressive scale from the Todai Health Index (THI; Aoki, Suzuki, & Yanai, 1974) which is a multidimensional questionnaire to assess physical and mental health condition. Takeuchi et al (1994) reported finding significant gender differences across all the ethnic groups with girls expressing more

depressive symptoms than boys. Takeuchi et al (1994) also reported that there was an ethnic difference in regard to depression among boys, with the mean THI-D score for Japanese boys being significantly higher than that for Hispanic boys. Anglo boys had the second highest score and Hispanic boys was the lowest. Among girls, scores were highest in the Hispanic group followed by the Japanese and the Anglos. The difference among the three female groups, however, was not significant.

Roberts & Sobhan (1992) investigated the prevalence of depressive symptoms among adolescents from Anglo, African, Mexican and other Hispanic Americans aged 12-17 years (N= 2200). Depressive symptomatology was assessed with 12-items taken from the CES-D20. Roberts et al (1992) reported that females reported more depressive symptoms than males in every ethnic group. Mexican American females tended to report more depressive symptoms than other females. Similarly, among all males Mexican American males reported more depressive symptoms than males of other ethnic groups.

In their review of community studies of adolescent depressive disorders Fleming & Offord (1990) reported that depression was not more prevalent in whites compared to blacks in one study (Costello et al 1988). It was more common in black than white adolescent males in one study (Schoenbach et al 1982) and more common in black than white females in another (Garison et al 1989). There were no race effects in one other study (Kandel and Davies, 1982; Kashani et al, 1988).

In one of the largest multiethnic studies of adolescents Dornbusch, Mont-Reynaud, Ritter, Chen, & Steinberg (1991) reported that Caucasian and Asian-American adolescents reported more depressive symptoms than African-American or Hispanic-American adolescents even after controlling for negative life events.

Weinberg & Emslie (1987) investigated depressive symptoms in 3294 high school students using the BDI and the Weinberg Screening Affective Scale. The sample consisted of 1825 black, 783 Anglo and 598 Hispanic adolescents. On the BDI, 22.6% scored as mildly depressed and 18.1% scored as moderately to severely depressed. Hispanic females had the highest proportion with moderate to severe depression (31.2%) while Anglo males had the lowest proportion (8.6%). Using the Weinberg criteria 13.4% were

depressed, with Hispanic females most depressed (22.4%) and Anglo males the least depressed (0.9%).

Makaremi, (1992) conducted a study to investigate gender differences on Zung depression scale in 200 (100 females & 100 males) Iranian high school students. The mean age for the sample was 15 years and mean depression scores were 47.03 for girls (SD=.98) and 48.52 (SD=1.11) for boys. Makaremi et al (1992) found no gender differences on the total score for depression and no significant gender difference on any of the five subscales of Zung's depression scale.

In sum, given the limited number of epidemiological studies of child and adolescent depression in general it is not surprising that there are few studies specifically investigating associations between race or ethnic association and gender. The findings from the small number of studies discussed here are inconsistent. Thus, it is difficult to draw firm conclusions in regard to ethnic status and prevalence rates because they utilise different measures of depression and also focus on different ethnic minority adolescents.

5. REPORTING BIASES

Some researchers have suggested depression is equal among males and females and that the gender differences in depression reflect males' unwillingness to admit and to seek help for depressive symptoms and is also the result of females willingness, more than males, to label themselves as depressed. A number of studies have failed to support this hypothesis with adults (e.g. Weissman & Klerman, 1985; Amenson & Lewinsohn, 1981; Nolen-Hoeksema, 1987). King & Buchwald (1982) for example, found that men were no less willing to disclose symptoms in either public (interview with researcher) or private (anonymous) disclosure. Similarly, Clancy & Gove (1974) investigated three types of response bias (perceived desirability; need for social approval; tendency to say 'yea-say' or 'nay-say') on the endorsement of items of the Langer Mental Health Scale (Langer, 1962). This scale consists of 22-items representing psychological and physiological symptoms of distress. These researchers found no significant gender difference in the ratings of the undesirability of mental health items or in need for social approval. Females, however, were more likely to 'nay-say' than males. Two other studies of help-seeking behaviour found that men

and women with similar levels of self-reported depressive symptoms were equally likely to seek psychiatric help or go to a general practitioner (Amenson & Lewinsohn, 1981; Phillips & Segal, 1969). No studies were found that directly tested these hypotheses with children and adolescents.

6. COHORT EFFECTS

A number of studies have suggested that rates of depression in adolescents have increased over time (Weissman et al 1984; Klerman, 1988). Klerman et al (1988) for example, reviewed data from large-sample family studies and community epidemiological studies and reported that the 'baby boomers' i.e. those born in the years after World War II have had both earlier age of onset and increases lifetime rates of depression. The median age of onset for the 1938 sample was in the mid-to-late 30s where as the median age of onset in the 1956 sample was in the early 20s. Similarly, Ryan et al (1992) reported increases in depressive disorders in more recently born cohorts of prepubertal siblings of depressive probands. The finding of increased rates of depression in more recent cohorts suggests that higher rates of depression are not just baby boom effects i.e due to the large cohort of youth. Gender differences in depression and depressive symptomatology do not appear to be due to cohort effects. Klerman et al (1988) reported that in every birth cohort the rates of depression are higher in women than in men, whether or not the data were from family samples or from community surveys. Klerman et al (1988) note that there is some suggestion that male/female differences have narrowed in recent decades with females being at greatest risk during the 1960s and 1970s.

7. SUMMARY

Although there has been considerable research in depression in young people there is still a considerable degree of ambiguity and variation in regard to the nature and prevalence of depressive symptoms and depressive disorders in both community and clinical samples. This is largely due to substantial methodological variations across studies. As a result of this it would be premature to draw any firm conclusions. All that can be reported here are what appear to be patterns or trends in the literature. A summary of the prevalence rates for depressive symptoms, depressive disorders in

community and clinical samples of children and adolescents are reported separately.

(1) Summary Of Prevalence And Gender Differences In Depressive Symptomatology In Community Samples Of Children And Adolescents

Rates of depressive symptoms in children in the community range from 5% (Lefkowitz et al, 1985) to 8% (Kashani et al, 1986). As only a few studies have examined depressive symptoms in children, these prevalence rates can only be interpreted as tentative. Studies investigating gender differences in children either report that boys more often report depressive symptomatology than girls (e.g. Nolen-Hoeskema, 1991), or report not finding a significant association between gender and depressive symptomatology (Lefkowitz et al, 1985; Kashani et al, 1986).

Rates of depressive symptomatology in adolescents in the community are more common than in children ranging from 5% to 32% (Teri et al, 1982; Kaplan et al, 1984; Kandel et al 1982; Koenig et al, 1994; Ehrenberg et al, 1990). Studies reporting prevalence rates according to severity suggest that 3% to 9% of adolescent depressive symptomatology is at the severe level (Teri et al, 1982; Kaplan et al, 1984; Koenig et al, 1994), while approximately 21% are in the mild to moderate range (Kaplan et al, 1984; Kandel et al, 1986). The majority of studies including a gender analysis report that girls are more frequently and more severely depressed than boys (Worchel et al 1987; Kandel et al 1982; Ehrenberg et al, 1990; Koenig et al, 1994; Peterson et al, 1991). This gender difference appears to emerge around the age of 13 years (Peterson et al 1991) with an approximate ratio of females to males 2:1. The female predominance in depressive symptomatology at adolescence appears to hold across cultures, however, too few studies have been conducted to finally conclude this. A few studies have reported finding no significant association between gender and depressive symptomatology (Teri et al; 1982; Kaplan et al 1984).

There is some evidence to suggest that the patterns of gender difference is not linear, that is it may not be identical for different levels of depression or over the course of adolescence and perhaps pre-adolescence. Studies that have analysed their data according to mild, moderate and severe levels of depressive symptomatology suggest that the gender difference holds for the

mild to moderate levels however, when depressive symptomatology is severe the gender ratio tends to be equal. There is also some suggestion that in middle adolescence (14-16 years) females are more likely to report depressive symptoms in the severe range (Worchel et al, 1987; Teri et al, 1982; Ehrenberg et al, 1990; Koenig et al, 1984), however, in older adolescents both males and females are equally likely to report severe depressive symptomatology (Ehrenberg et al, 1990; Koenig et al, 1984). Currently the studies available are too insensitive to be able to conclusively distinguish any patterns between age, gender and level of depressive symptomatology.

(2) Summary Of Prevalence And Gender Differences In Depressive Disorders In Community Samples Of Children And Adolescents

A number of studies have investigated depressive disorders in community samples of children. One study found no evidence of affective disorders (Kashani et al, 1983) however others report prevalence rates in the order of 0.6% to 3% (Fleming et al, 1989; Kashani et al, 1979; Kashani et al, 1983; Anderson et al, 1987; Kashani et al, 1986; McGee et al, 1992). Similarly to the research on gender differences in depressive symptomatology in community samples, the studies investigating depressive disorders report that either males are more frequently depressed than females (Anderson et al, 1987) or that there is no significant difference (Kashani et al, 1979; Kashani et al, 1983; Cohen et al, 1993; Fleming et al, 1989).

Studies reporting on the prevalence of depressive disorders in community samples of adolescents report prevalence rates from 1.5% to 9% (Kashani et al, 1987; Fleming et al, 1989; Lewinsohn et al, 1993; Cohen et al, 1993; McGee et al, 1992). Thus depressive disorders tend to be more common among adolescents than children. Most of the studies including a gender analysis reported that females were more likely to be diagnosed with an affective disorder than were males (Kashani et al, 1987; Lewinsohn et al, 1993, Cohen et al, 1993). After puberty the prevalence rates for girls is almost twice that of boys. McGee et al (1992) reported that at age 11 years there was a male predominance, however, by age 15 years this had reversed to a female predominance (M:F, 4.3:1 to 0.4:1). Fleming et al (1989) only found a gender difference for depressive symptoms, not depressive disorders. This finding is consistent with other studies discussed previously which have found that gender difference are not apparent when depressive symptomatology is severe (Ehrenberg et al, 1990; Koenig et al, 1984).

(3) Summary Of Prevalence And Gender Differences In Depressive Disorders In Clinical Samples Of Children And Adolescents

Depressive disorders in clinical samples of children are relatively rare. Prevalence for major depression range from 0.9% to 4% in 1 to 9 year olds (Kashani et al, 1987; Kashani et al 1984) to 13% to 23% in 7 to 12 year olds (Kashani et al, 1981; Kashani et al, 1982). Only one of these studies conducted a gender analysis which was reported to be non significant.

Depressive disorders in clinical samples of adolescents are more common than in children. Prevalence rates range from 10% to 23% for major depression (Weller et al, 1983; Kazdin et al, 1983; Friedman et al, 1982; Kashani et al, 1981) and 21% to 32% for other depressive disorders including dysthymia or atypical depression (Friedman et al, 1982; Feinstein et al, 1984). As is the case with studies with children only one study reported finding no significant association between gender and depression. As the other studies discussed here did not include a gender analysis little is known about gender and depression in clinical samples of adolescents. Currently there is no evidence that there are gender differences in depressive disorders in clinical samples of preadolescents or adolescents.

Overall, the frequency of depressive symptoms and depressive disorders in both community and clinical samples appears to increase with age, at least until adolescence. There also appears to be a tendency for Major Depressive Disorder to be less common than Dysthymic Disorder, although too few studies have distinguished between the two disorders to be conclusive. Research by Kovacs, Feinberg, Crouse-Novak, Paulauskas, Pollock, & Finkelstein (1984) indicates that child onset dysthmia, may in fact, evolve into Major Depressive Disorder. Not surprisingly the prevalence rates reported for depressive disorders in clinical samples is considerably more than in community samples, for both children and adolescents. The majority of studies of depression suggest that before adolescence there is a tendency for boys to have equal levels of, or more depression, than girls. A gender difference in the frequency and severity of depressive symptomatology appears to emerge at mid-adolescence sometime between the ages of 13-15 years. Studies investigating depressive disorders in community samples of children find either no significant difference or a

slight male predominance. In community samples of adolescents the results are less consistent, however, most studies find a female predominance in depressive disorders. Too few studies have included a gender analysis in clinical samples of adolescents thus little can be stated in regard to the association between gender and depression in this group. The research indicates that there continues to be a female predominance in depression into every adult age group except the elderly (Nolen-Hoeksema, 1990). An adequate theory of gender differences in depression needs to be able to account for the epidemiological trends summarised here.

8. METHODOLOGICAL PROBLEMS

The wide variations in prevalence reported here is probably due to numerous methodological differences across studies. Moreover, many studies do not make clear whether they are measuring incidence, point prevalence, period prevalence or life time prevalence which may also account for some of the variation. The measurement of depression or depressive symptoms varies considerably across studies. For an example, a variety of structured diagnostic interviews and checklists, have been used alone, or in conjunction, to measure depressive disorders. The Diagnostic Interview Schedule for Children (DISC; Costello, Edelbrock, Kalas, Kessler, & Klaric, 1982) was one of the most commonly used interview schedules in this area, however, variations in the use of this schedule across studies, different types of interviewers and different informants (child only vs. child and parent) have resulted in considerable variation, thereby making comparisons of studies difficult. Moreover, different studies have used different criteria to define a case. Although there was some consistency in the use of criteria (e.g. DSM-III, DSM-III-R, Feighner, Weinberg criteria) to diagnose depression across studies, variation was introduced because of differences in how data were combined from different informants. Many studies failed to adequately describe how they utilised various sources of information. Studies also varied in whether other criteria for caseness (e.g. required treatment) in addition to diagnostic criteria were required, and in whether or not differing levels of caseness were used. Clearly, prevalence rates and conclusions about gender differences in depression are likely to vary depending upon the selection criteria for depression. There has been considerable controversy as to the appropriateness of DSM criteria for children. This is particularly the case for pre-schoolers. The possibility cannot be ruled out that the low rates of depression reported in this age

group are due to inadequacies of the criteria, rather than because depression is rare. At present the clinical significance of depressive symptoms in children is ambiguous.

Due to the difficulties of assessing depression in pre-school children researchers have generally relied upon parental reports of depressive symptomatology or depressive disorders in this age group. There is evidence, however, that differences in rates of depression or depressive symptomatology vary depending upon the informant (Kazdin, Esveldt-Dawson, Unis, & Rancurello, 1983). In studies, where parent or teacher reports are relied upon as the major source of diagnostic information, prevalence rates are likely to be lower than those studies that have relied on self-report. Studies investigating depression in older children typically rely on information from both children and their parents. As discussed previously many studies have noted that there are low correlations between parent-child reports of depression. Summarising, these often discrepant data, may result in researchers missing important features and different methods of integrating different sources of information across studies may account for variation in rates of depression reported in the literature.

Prevalence rates of depressive symptomatology in adolescents are entirely based on self-report measures and have not been validated by other sources of information such as parents or teachers. Teachers, in general, were underrepresented as informants for both children and adolescents. In addition, the self-report measures utilised across studies has varied considerably further compounding the difficulty of comparing results across studies. There is also evidence (to be discussed below) that boys and girls tend to differentially exhibit internalising and externalising symptoms of depression. Thus the number of items tapping different symptoms or disorders included on a measure may partially determine whether more boys or girls are diagnosed with depression.

Gender patterns across different levels of depressive symptomatology need to be investigated more carefully. There is evidence that the relation between gender and depression in not linear and may vary according to the level of depressive symptomatology. Koenig et al (1994) have suggested that boys and girls may experience depression differently, that is, girls may perceive and/or acknowledge depression as a more continuous variable, whereas boys may experience it as an all-or-none phenomenon, not noting themselves to be symptomatic unless the symptoms are relatively intense.

The possibility of associations between gender and level of depressive symptomatology have important implications for our understanding of gender differences in depression. As Koenig et al (1994) have argued, if a variable of interest in one or both groups being compared is not normally distributed, then drawing conclusions on the basis of mean differences alone is misleading and may obscure important factors.

In general, subjects in both the community and clinical studies are predominantly white and middle class. In the case of community samples they are typically school students and therefore exclude school drop outs and those with poor attendance. Such samples probably underrepresent children with depressive symptoms or disorders. The selection of subjects for clinical samples varies considerable. Some studies utilise inpatients, while others employ outpatients or a mix of inpatients and outpatients. Clinical samples are also open to distortion due to biases in referral and treatment patterns. A considerable majority of children with emotional disturbances are never referred to any professional agency (Angold, 1988). Thus, in clinically referred samples Berkson's (1946) bias is likely to be operating. Berkson (1946) points out that the presence of one disorder leads to an increased probability of referral which is why clinical studies tend to find inflated rates of comorbidity. In addition, individuals who seek, or are referred for treatment, typically represent the most severe cases, or those most disruptive to society or those in the upper socio-economic classes (Wing, 1976). Thus, referred or treated cases do not necessarily represent an accurate rate of a disorder in the population. Moreover, many studies, particularly those investigating depressive disorders in clinical populations, employ sample sizes which are too small and thus do not provide accurate estimates of gender differences in prevalence of depression.

The majority of studies group children and adolescents together across extremely broad age ranges (e.g. 1-9 years; 12 to 17 years). Moreover, some researchers collapse preadolescents and adolescents into one group. As a consequence, attempts to differentiate prevalence for children and adolescents, or to note any associations between depression, gender and age are extremely difficult and often confounded by this practice. There are vast developmental differences between a 1 year old child and a 9 year child, as is there between a 12 year old adolescent and a 17 year old adolescent. Such differences are liable to have important implications for understanding gender differences in depression, however, more often than not, this issue is not considered. Comparing differences in mean scores to obtain prevalence

rates in groups with broad age ranges will obscure more finer age and gender related differences. It is possible that what appears on the surface to be a linear increase in rates of depression, may in fact be curvilinear. One other consequence of this practice is that current studies are not sensitive enough to delineate precisely when gender differences emerge. Further research needs to employ larger samples with narrower age ranges of children and adolescents in order to produce stable estimates of prevalence for each age and gender. Finally, none of the epidemiological studies take account of pubertal status. Consequently, any patterns between prevalence, age, pubertal status and gender are obscured. Future studies need to document pubertal status, age and gender differences more clearly in order to delineate important relations between these factors and depression.

In summary, epidemiological research on depression in children and adolescents is marked by a lack of clarity and consistency across studies. There is a conspicuous lack of studies employing large representative samples of children and adolescents, specifically designed to determine when gender differences in depression emerge and to provide precise estimates of the prevalence of depression.

SECTION 5

GENDER DIFFERENCES IN DEPRESSION IN CHILDREN AND ADOLESCENTS

The literature investigating gender differences in depression in children and adolescents has not been guided, at least explicitly, by a theoretical framework. Rather, most studies have examined one or more specific etiological variables which have been shown to be associated with depression in the general population or in clinical samples and, consequently, may account for gender differences in depression. As Nolen-Hoeksema & Girgus (1994) have noted few of these studies provide the longitudinal or cross-sectional data necessary to directly test theories, much less compare theories with each other. As most studies have investigated specific variables postulated to account for the predominance of depression in females, this review has been organised around those variables that are salient in the literature. Throughout this thesis each of the studies investigating specific variables thought to be associated with the gender differences in depression will be examined in regard to how they relate to most prominent theories in this area. As these studies do not specifically test theories only tentative evidence for one model or another can be gathered. Studies which examine variables that may be associated with gender differences in children and adolescents are discussed separately.

CHAPTER 9

GENDER DIFFERENCES IN DEPRESSION IN PREADOLESCENT CHILDREN

1. INTRODUCTION

Analyses of gender differences in depressive symptoms and disorders in preadolescent children is important if we are to understand when gender differences begin to emerge and why. The epidemiological research is inconsistent in regard to prevalence of depressive symptoms and disorders in preadolescent boys and girls. This is the case for both clinical and nonclinical samples. Some studies, for example, have reported finding that preadolescent boys are more severely and more frequently depressed than preadolescent girls (Nolen-Hoesekma, 1991; Anderson et al, 1987), while other studies report that prevalence rates are equal (Lefkowtiz et al, 1985; Kashani et al, 1979, 1983, 1986; Cohen et al, 1983; Fleming et al, 1989). What is consistently reported in the literature is that gender differences in prevalence of depressive symptomatology begins to emerge some time in early adolescence.

Although girls may not manifest more depression than males in preadolescence, it is still possible that the vulnerability factors which may predispose them to depression at puberty are evident in preadolescence. Few studies, however, have investigated this hypothesis. The studies that do exist are cross-sectional, rather than longitudinal and, consequently, only associations between depression and other variables can be stated, rather than causal links.

The following section is a summary of the main theories which have been proposed to account for research reporting that boys have a greater vulnerability to depression, and other psychopathology, during childhood. This is followed by a critical review of all the research to date which has investigated associations between gender and depressive symptomatology in children. No research has been specifically designed to test each of the

theories, however, some of the research is relevant and allows tentative conclusions to be drawn in regard to which theories are supported.

2. THEORIES

The following theories have been posited to account for the male predominance of depression in preadolescence;

(a) It has been hypothesised that boys are constitutionally weaker and thus, more vulnerable to both physical and psychological illness than girls (Eme, 1979). There is substantial evidence to suggest that boys are more vulnerable than girls to physical illness. Males, for example, tend to suffer more birth defects than females, 37% more males than females die at infancy and males are more likely to suffer from more childhood diseases than females (Garai & Scheinfeld, 1968 cited in Nolen-Hoeksema, 1990). It is suggested that boys greater predisposition to depression may result from the same vulnerability to physical disease (Nolen-Hoeksema, 1990).

(b) It has also been suggested that boys have more irritable temperaments than girls which leaves them more vulnerable to psychopathology (Moss, 1974). Nolen-Hoeksema (1990) has noted that there is evidence that children who are emotionally tense, whose behaviour is difficult to change, who have irregular eating, sleeping and bowel habits or who tend to be irritable and negative in mood are at relatively high risk for psychopathology. To date however, there have not been any specific investigations to ascertain whether there is a link between boys' greater tendency toward irritable temperaments and depressive symptomatology.

(c) Another explanation posited to account for males vulnerability for depression in childhood proposes that males are more reactive, than females, to environmental stress (Eme, 1979). Nolen-Hoeksema (1990) notes that a number of studies have indicated that boys are more likely to experience depression or exhibit behavioural disturbances following parental separation or divorce (Hetherington, Cox, & Cox, 1979; Rutter, 1970). It has been suggested that boys' greater reactivity to stress may be due to their biological vulnerability and from their greater irritability. Nolen-Hoeksema (1990) posits that an alternative explanation for boys' greater reactivity to stressors, by suggesting that, boys receive less support and more responsibility from adults during times of stress than girls. She cites

examples such as boys' are sometimes asked to be "the man of the house" when parents separate or are also told to be "strong" and "act like a man" rather than cry and ask for reassurance in times of stress. This hypothesis however, remains largely untested.

(d) A further explanation for boys' greater vulnerability to depression is that adults' tolerance of deviance in boys is lower than their tolerance of deviance in girls. Thus, parents are more likely to bring their sons, as opposed to their daughters' psychopathology to the attention of professionals (Eme, 1979). It has been proposed that adults are less tolerant of depressive behaviours, such as passivity and crying, in boys than in girls, because such behaviours do not fit with boys' gender role (Nolen-Hoeksema, 1990). As Nolen-Hoeksema (1990) points out, however, some epidemiological studies of childhood depression in the general population also show that boys are more likely to be depressed than girls. Thus, although adults may be less tolerant of depressive symptomatology in boys this does not explain why boys report being depressed more frequently.

(e) Finally is has been hypothesised that parents' tendency to put more pressure on boys, than on girls, to achieve and to be assertive, while at the same time threatening boys with punishment for overstepping boundaries may create stress for boys that predisposes them to depression (Gove & Herb, 1974). Nolen-Hoeksema (1990) notes that there is evidence that parents put more pressure on boys to achieve than they put on girls in some academic subjects (Hoffman, 1977). Currently, however, this hypothesis is untested.

3. RESEARCH

A search of the literature revealed only two studies which have specifically looked at gender differences in depressive symptoms in preadolescent children. Nolen-Hoeksema, Girgus, & Seligman (1991) for example, adopted the construct of explanatory style, as described in Abramson, Seligman, & Teasdale (1978) reformulated learned helplessness theory, and suggested that gender differences in childrens' response to depression accounts for the slight tendency for males to be more frequently depressed than females prepubertally. A maladaptive explanatory style, which is characterised by a tendency to attribute negative events to factors that are stable, global and internal, while attributing positive events to unstable, specific and external factors, is thought to create a vulnerability to

depression. In their longitudinal study, Nolen-Hoeksema et al (1991) examined the explanatory style of 352 third grade (8 year old) school children (178 boys; 174 girls). Depression was assessed with the CDI (Kovacs, 1980/81) and explanatory style was assessed with The Childrens' Attributional Style Questionnaire (CASQ; Kaslow, Tanenbaum, & Seligman, 1978). Four testing sessions were conducted over the period 1985 to 1987. Nolen-Hoeksema et al (1991) found that males consistently reported more depressive symptoms than females. Males and females were equally likely to report sad mood, self-derogation, and physiological symptoms, however, males were more likely to report behaviour disturbance symptoms and anhedonia. Nolen-Hoeksema et al (1991) argued that anhedonia symptoms in the CDI tend to tap perceived social relationships. Therefore, they suggested, that controlling conduct and enjoying relationships with other children are more often problems that boys perceived in themselves than did girls. Nolen-Hoeksema et al (1991) also reported that at all four testing sessions boys were more likely to choose internal, stable and global explanations for negative events that girls. Thus, they accounted for their finding of a gender difference in reported depressive symptoms by suggesting that boys were more depressed that girls, because boys had a more maladaptive explanatory style.

There are a number of limitations to Nolen-Hoeksema et al's (1991) study. These researchers relied on one self-report measure to assess depressive symptomatology. As discussed previously, there is growing consensus in the literature that multiple assessment sources and methods are more appropriate for this age group. Although reporting that, overall, boys were more severely depressed than girls, Nolen-Hoeksema et al (1991) does not state whether boys more were more frequently depressed than girls. Similarly, they do not specify what criteria they used in their sample to identify depressed children from non-depressed children.

Despite these limitations Nolen-Hoeksema et al (1991) provide some support for the theory that preadolescent boys' increased vulnerability for depression may be due to their greater reactivity to stress. Boys reported more depressive symptoms than girls, and also chose more pessimistic (internal, stable, global) explanations for negative events than did girls. Thus, boys' greater reactivity to stress and subsequent reporting of severe depressive symptoms may be due to a more maladaptive explanatory style, rather than, or in combination with, a biological vulnerability. Future studies need to investigate this hypothesis. Nolen-Hoeksema et al (1991) do

not attempt to account for why, in preadolescence, boys develop a more maladaptive explanatory style than girls. In addition, other than to suggest that girls may develop a more maladaptive explanatory style than boys in adolescence, Nolen-Hoeksema et al (1991) do not adequately account for the switch in gender ratio at adolescence.

Boggiano & Barrett (1992) have suggested that gender differences in depression in children are the results of differences in motivational orientation. These researchers measured the motivational orientation of 127 third grade (8 years old) school children with Harter's (1981) Scale of Intrinsic versus Extrinsic Orientation in the Classroom. Extrinsic motivational orientation refers to those children who approach tasks for extrinsic reasons such as grades or to gain approval, in contrast, intrinsic motivational orientation refers to those children who approach tasks for the inherent pleasure of mastering challenges. Boggiano and Barrett (1992) argue that a number of recent studies have indicated that extrinsic orientation is associated with the cognitive deficit of helplessness, a concomitant of depression (Boggiano & Barrett, 1985; Boggiano, Barrett, Main, & Katz, 1985). Depressive symptoms were assessed using Harter & Nowakowski (1987) Dimensions of Depression Profile for Children and Adolescents, which is a self-report questionnaire. Boggiano & Barrett (1992) found that children who had a extrinsic motivational orientation were more likely to be depressed than children who had an intrinsic motivational orientation. In contrast to Nolen-Hoeskema et al (1991), Boggiano & Barrett (1992) found that females self-reported significantly more depressive symptoms than males i.e. overall females were more severely depressed than males. These different findings may be due different sample characteristics and the use of different instruments in each of these studies to measure depressive symptomatology. In addition to reporting more depressive symptoms, Boggiano and Barrett (1992) found that females were more extrinsically motivated than males. They therefore concluded that females tendency to be more extrinsic than males makes them more susceptible to helplessness and depression. Boggiano and Barrett do not discuss the possible mechanisms underlying females more extrinsic motivation, except to note the role of socialisation in engendering an "extrinsic set" in females.

The results of this study do not support the theory that preadolescent males are more pressured, at least academically, than females by their parents and others to achieve, which results in their being more vulnerable

to depression. If this were the case one would expect males to be more extrinsically oriented than females as their motivation for achievement would come from external factors such as gaining approval from their parents, rather than any intrinsic factors. There are a number of limitations to this study. The researchers only used one measure of depressive symptomatology which was a self-report questionnaire, and therefore, subject to self-report biases. Moreover, the Harter & Nowakowski (1987) Dimensions of Depression Profile for Children and Adolescents is not commonly used to assess depressive symptoms in children or adolescents, thereby limiting comparisons with other studies. Although females were more severely depressed, Boggiano et al (1992) do not state whether females were more frequently depressed than males. As a consequence of this, interpretation of their results is limited. If extrinsic motivation is associated with depression this may only be the case for individuals with severe depression which in this study happened to be female. The motivational orientation of severely depressed males would also need to be assessed to examine this possibility. Their research is also correlational and, as such, causal inferences cannot be drawn. It is not clear for example, whether extrinsic motivational orientation is an antecedent or consequence of depression in children. Clearly, longitudinal research is needed to examine the causal relation between motivational orientation and depression. It is also possible that other factors, such as self-evaluation or negative life events, not investigated in this study are more important precipitants of depression than extrinsic motivation.

A number of studies, while not specifically looking at gender differences in depressed children, have included an analysis of gender within their research. Larson, Raffaelli, Richards, & Ham (1990) for example, conducted a study to investigate the daily manifestation of depression in children and adolescents and how these might vary as a function of age, gender and across various contexts. More specifically, they investigated the daily states and time use patterns associated with depression in 483, 5th to 9th graders (10-14 years). Depressive symptoms were assessed with the CDI with a cut-off of 12 or more classifying a depressed subgroup. Subjects in the study carried electronic pagers (paged seven times per day) and a booklet of self-report forms for 1 week. Larson et al (1990) stated that they followed the procedures of the Experience Sampling Method (ESM; Csikszentmihalyi & Larson, 1987). The ESM included a subjective state scale which evaluated affect, emotional variability, social feeling state, psychological investment, and energy level. Social context,

other context and time-allocation variables were also recorded at each signal. No significant gender differences were found in prevalence, nor severity of depressive symptoms. Larson et al (1990) found that depressed boys, but not depressed girls, spent much less time with friends, particularly of the same sex, suggesting that social isolation was more strongly associated with depression for boys than girls. There was no subjective difference in how depressed boys and depressed girls felt when they were with their friends. Larson et al (1990) noted that depressed girls appeared to experience as much subjective social isolation as depressed boys, however, for boys these subjective feelings corresponded with an objective reality. Both depressed and non-depressed males and females spent the same amount of time thinking about friends. Therefore, as Larson et al (1990) concluded, friends appear to be equally important to depressed and nondepressed boys, thus the social isolation is not voluntary.

The gender difference in the time spent with friends may be a consequence of males' tendency toward greater aggression and antisocial behaviour (Gjerde, Block, & Block, 1988). This externalisation of depressive symptoms may lead to rejection by peers (Larson et al, 1990). If this is the case, then the findings of this study provide some support for the theory that males tendency to be more irritable than females results in their increased risk for depression. Alternatively, however, the depression itself may alienate potential friends. Although this may account for why depressed boys have less social contact with friends it does not account for why males report depressive symptoms more frequently than females. Despite this hypothesising, however, the fact remains that Larson et al (1990) did not find any gender difference in the frequency or severity of depressive symptoms. Interpretation of the results of this research is somewhat limited. This study was based on non-clinical sample of school students and the researchers relied on a single self-report inventory to assess depressive symptomatology. The cut-off on the CDI was low (12), consequently, this study would have included a number of individuals with depressive tendencies as well as with severe depression. Moreover, the subjects in Larson et als' study included both prepubertal and post pubertal subjects. Thus, any differential effects pubertal status may have had would have been obscured. The results of Larson et al (1990) are supported by those of Nolen-Hoeksema et al (1991, discussed previously) who found that controlling conduct and enjoying relationships with other children are more often problems that boys perceive in themselves than do girls.

Wierzbicki (1989) conducted two studies with children (8-14 years) to examine the relation between childrens' perceptions of counter-depressive activities, age, sex and level of depression. Childrens' perceptions of counter-depressive activities were tapped by asking children to "write down things to do that help a person who is feeling sad or depressed to feel better". In study 1, 322 children (8-12 years) were asked to write down as many counter-depressive activities as possible. This was then qualitatively analysed producing ten categories (activity, self-care, pharmacology, cognitive/affective experience, recreation, help-seeking, avoidance, qualifiers, problem solving and other) of counter-depressive activities. Wierzbicki (1989) found that girls provided more counter depressive responses that boys and more often reported help-seeking responses, whereas boys, more frequently produced both 'activity' and 'recreation' responses. Thus, while females reported more counter depressive responses, they were of a different type to those reported by boys. In the 2nd study, 98 children (8-14 years) completed the CDI, in addition to generating counter-depressive activities. As with the first study girls provided more counter-depressive activities than boys. Depression scores were correlated with the number of counter-depressive activities i.e. as depression increased, children listed fewer coping activities. Depression scores were unrelated to the types of counter-depressive activities provided. Wierzbicki (1989) noted that the results of his study were consistent with research on gender differences in the coping strategies of adults in that women are more likely to cope with stressful circumstances by engaging in help seeking behaviour (Funabiki, Bologna, Pepping, & Fitzgerald, 1980).

It is possible that girls reporting of more counter-depressive activities and help-seeking activities than boys is because adults are less tolerant of such behaviours in boys. Help seeking behaviour is not consistent with the male gender stereotype which encourages boys to make more action oriented responses to counter negative states or events. Wierzbicki (1989) provide little information in regard to the measurement of depression other than to note using the CDI. Thus, it is unclear whether females reported more, less or the same level of depressive symptomatology as males, or whether their was a gender difference in the frequency of depression and how these factors relates to the number of counter-depressive activities reported. Moreover, Wierzbicki et al (1985) examined children perceptions of counter-depressive activities and not their participation. In addition, the effectiveness of the counter depressive activities remains unclear. Researchers need to investigate how self-reported depressive

symptomatology correlates with childrens' actual participation in counter-depressive activities. By looking at children in the 8 to 14 year age range, it is likely that any differential effects of pubertal status were confounded. Finally, this research was based on a non-clinical sample, thus, the results cannot be assumed to generalise to other samples.

Cole (1990) examined the cumulative effect of social and academic competence on depressive symptoms in 9 year old non-referred school children. Depressive symptoms were assessed with the CDI. In contrast, to Nolen-Hoeksema et al (1990), Cole (1990) did not find a gender difference in level of depressive symptomatology. Social and academic competence were assessed by self-report, peer ratings, and teacher ratings. Cole, (1990) found strong correlations between depression and social and academic performance and that these variables had a commulative effect on depressive symptoms. Gender differences also emerged on the measures of academic performance. Teachers and peers rated girls as significantly more competent than boys, however, girls' self-rating were no higher than the boys'. In relation to teacher ratings, girls tended to underestimate their academic competence whereas, boys tended to overestimate theirs. Furthermore, the tendency to underestimate academic competence was related to self-reported depressive symptoms. Cole (1990) suggested the possibility that preadolescent girls manifest a variety of depressogenic cognitive biases including a tendency to underestimate personal competencies and the tendency to attribute failure to lack of ability. These tendencies may contribute to the emergence of the gender difference in depression which occurs in adolescence. Although finding a strong link between perceptions of competency and depression, Cole's (1990) study is correlational and, as such, inferences cannot be made in regard to cause and effect. Depressive symptoms may be as much a cause of perceived or actual incompetence as an effect. Longitudinal research is needed to further investigate the relation between competence and depressive symptoms, in general, and in regard to gender differences.

In a further study of the relation between competency and depression Cole (1991) investigated peer nominations of competence in five domains; social, academic, physical attractiveness, conduct and sport in 1422 school children (8 & 9 years old). Depressive symptoms were measured with the CDI. Cole (1991) reported that 11% of the children scored above 19 on the CDI and there was no significant gender difference in depressive symptoms on the CDI. Cole (1991) concluded that his findings supported a competency-

based model of child depression in which peers' perception of incompetence were more strongly related to depression than peers' perception of competence, especially for girls. More specifically, for girls, differences in perceived incompetence in the conduct, social, sports and academic domains were related to depression, whereas competency in these areas was not. For girls, both peers' perceived physical unattractiveness and attractiveness were related to depression. A different pattern was found for boys. Peer nominations of behavioural conduct, social acceptance and sports and academic competence were linearly related to depression. Thus increments in peers perceptions of incompetence in these areas was related to decrements in depression. In contrast to girls, perceived physical attractiveness was unrelated to depression for boys, while perceived unattractiveness was. This study is limited by a number of factors. Competency was assessed by peer perception which does not necessarily translate into actual competence per se. Cole (1991) suggested that in the competency-based model peers' perceptions of competence are translated into feedback, which subsequently affect the child's self-perceptions and subsequent depression. Teacher and parent feedback also likely to impact on the child's self-evaluations, however, these were not assessed. Cole (1991) noted that many of the effect sizes found in this study were small. This factor combined with the large sample size may have resulted in the findings of this study being exaggerated. Finally, this study was correlational and cross-sectional, thus, the results cannot be interpreted as indicating that the relation between competency and depression is causal.

Lefkowitz & Tesiny (1985) conducted a study to investigate 38 variables thought to be associated with depression in children (n= 1, 547) aged 8 years through to 10 years. Depression was assessed with the Peer Nomination Inventory of Depression (PNID; Lefkowitz & Tesiny, 1980) and the CDI. Locus of control was measured with the Children's Nowicki-Strickland Locus of Control (Nowicki & Strickland, 1973) and passive behaviour was measured by a 9-item scale which measured the frequency of television viewing (Lefkowitz & Tesiny, 1980). IQ was assessed by obtaining a human figure drawing for each child and was scored according to a method described by (Harris, 1963). An interview containing 168 items was administered to 508 mothers. Items included information on family demographics and child developmental information, parental rejection, parental disharmony, mother's rating of child's depression, happiness and a child's responsibility scale. Lefkowitz et al (1985) did not find a gender difference in prevalence or severity of depression. They did find that 16 out

of the 38 variables they assessed were correlated with PNID for girls as compared to 9 out of 38 for boys. Children of both genders nominated on depressive symptoms by their peers were also nominated as unhappy and unpopular. These children also rated themselves as depressed, but only girls were rated as depressed and unhappy by their mothers. A variety of indicators of cognitive functioning variables were inversely related to PNID scores; IQ for boys, teacher-rated work-study habits for both sexes, achievement on standardised tests of reading and maths for girls. Income was inversely related to PNID scores, but only for girls. Girls nominated as depressed viewed more television than girls who received low PNID scores. Social behaviour in school as rated by the teacher was negatively related to PNID for both genders. Girls PNID scores were positively related to the mother ratings of their child's depression and neuroticism and were inversely related to the measure of extroversion. Lefkowitz et al concluded that the larger number and greater strength of variables associated with PNID scores for girls may be a precursor of gender differences in depression. The findings of this study are contrary to the theory that preadolescent boys are more reactive to environmental stressors than girls. No significant gender differences, in either the prevalence or severity of depressive symptoms, were found in this sample. Furthermore, a stronger relation was found between psychosocial stressors and peer nominated depressive symptoms in girls, than in boys. Limitations of this study include the fact that psychosocial variables were assessed in relation to peer nominations of depressive symptoms, rather than self-reported measures of depression. This is pertinent to both the finding of no gender difference in the severity and prevalence of depressive symptomatology and in regard to the main findings. In addition, this study is correlational thus, no causal sequence can be determined from the data.

Edelsohn, Ialongo, Werthamer-Larsson, Crockett, & Kellam (1992) investigated the stability and internal consistency of depressive symptoms and their relation to children's responses to developmental tasks they confront in (n=1,313) first grade (6 years). Depression was measured with the Child Depression Inventory (CDI), teacher's perception of a child's adaptation to classroom tasks was measured with the Teacher Observation of Classroom Adaptation-Revised (TOCA-R; Wethamer-Larsson, Kellam, & Wheeler, 1991), the Peer Assessment Instrument (PAI; Pekarik, Prinz, Leibert, Weintraub, & Neale, 1976) was used to assess peer perceptions of children and achievement was assessed with the California Achievement Test (CAT; Wardrop, 1989). Edelsohn et al (1992) found that children's self-

reports of depressive symptoms were relatively stable over a 4-month interval. Depressive symptoms were also significantly related to a number of salient developmental tasks at entrance to first grade, including academic achievement, peer relations and attention/concentration in the classroom. Edelsohn et al (1992) did not find any evidence of gender differences in the level of depressive symptoms. Nor did they find a difference between boys and girls in terms of the relation between depressive symptoms and the measures of academic and social functioning employed. These results stand in direct contrast to Lefkowitz et al (1985), who found a larger number, and greater strength of relation, between a variety of psychosocial variables and depressive symptoms for girls, as opposed to boys. It is possible that this differing result may be due to the younger age of subjects in Edelsohn et al (1992) study. In addition, only one measure of depressive symptomatology was used, which was based on self-report only.

4. SUMMARY

It has been hypothesised that preadolescent boys' greater vulnerability to depression is due to either a biological predisposition, temperamental vulnerability, heightened reactivity to environmental stressors, less tolerance of deviance in boys and/or more pressure to achieve and be assertive by adults. The literature investigating gender differences in depressive symptoms in children is sparse and no studies have been designed specifically to test each of the theories. These factors make theory evaluation difficult, if not impossible. One study conducted by Nolen-Hoeksema et al (1990) has provided some support for the theory that boys' increased reactivity to stress may make them more vulnerable to depressive symptoms. These researchers suggested that boys' greater reactivity to stress, and subsequent reporting of more severe depressive symptoms, may be due to a more maladaptive explanatory style. There is little, or no evidence, for any of the other theories which attempt to account for preadolescent males' vulnerability to depression. Moreover, the research discussed here brings into question the assumption that preadolescent boys are more depressed than preadolescent girls. There is very little empirical evidence for this assumption. While one study reported that males reported more depressive symptoms than females (Nolen-Hoeksema, et al., 1991), another found that females reported more depressive symptoms than males (Boggiano et al, 1992). The majority of studies (Larson et al, 1990; Cole et al, 1990, 1991; Lefkowitz et al, 1985; Edelsohn et al, 1992) however, reported finding no

significant gender differences in the level of depressive symptomatology in preadolescents. Few studies investigated gender differences in the frequency of depressive symptoms, the two studies that did (Larson et al, 1990; Lefkowitz et al, 1985) reported a non significant result. The findings reported here parallel the inconsistent results in the epidemiological research in this area. Furthermore, an adequate theory of depression in young people needs to account for the pattern of depressive symptomatology across both childhood and adolescence. None of the theories posited here account for the emergence of gender differences in depressive symptoms at adolescence.

Although the majority of studies did not find a gender difference in the prevalence or severity of depressive symptoms in preadolescents there is some indication that there may be gender differences in other variables thought to be associated with depression. These factors may lead girls to be more vulnerable to developing depression at adolescence. For example, depressed preadolescent girls appear to have a tendency to underestimate their personal competence (Cole et al, 1990). It has been suggested that the interaction of competence and depression in children may be a feed-back loop in which performance difficulties contribute to depression which in turn, reinforce feelings of incompetence or inadequacy (Leadbeater, Blatt, & Quinlan, 1995). For girls, both peers' perceived physical unattractiveness and attractiveness appear to be related to depression. In contrast to girls, boys' perceived physical attractiveness was unrelated to depression, while perceived unattractiveness was (Cole et al, 1991). Psychosocial stressors appear to be related to depressive symptoms in both girls and boys, however, a greater number and greater relation appear to be associated with depressive scores, as measured by peer report, for girls than boys (Lefkowitz et al, 1985). Not all studies report a gender difference in psychosocial variables (Edelsohn et al, 1992). There is also evidence that girls may have an extrinsic motivational orientation which has been found to be associated with depression (Boggiano & Barrett, 1992). These vulnerabilities may result in girls developing a lower self-efficacy and self-esteem compared to boys, which leaves them more vulnerable for developing depression when faced with challenges of adolescence. It is not clear from the research whether such gender differences are precipitants of depressive symptoms or, are in fact, gender differences in the response to being depressed. These studies provide tentative evidence that girls vulnerability to depressive symptoms my be evident in preadolescence, however, further research needs to replicate and extend these findings.

CHAPTER 10

THEORIES OF GENDER DIFFERENCES IN DEPRESSION IN ADOLESCENCE; EXPLAINING THE EMERGENCE

1. INTRODUCTION

A consistent epidemiological finding in the research is that around early adolescence a significant gender difference emerges in the severity and frequency of depressive symptoms and depressive disorders in the general population. More specifically, after the age of about 13 years, girls are twice as likely to be depressed than boys. The research indicates that there continues to be a female predominance in depression into every adult age group except the elderly (Nolen-Hoeksema, 1990).

2. MODELS

Three basic models have been proposed to account for the emergence of gender differences in depression (Nolen-Hoeksema & Girgus, 1994). According to the first model the same factors cause depression in both males and females. These risk factors are equivalent during preadolescence, however, they become more prevalent in girls compared to boys during early adolescence. Nolen-Hoeksema & Girgus (1994) notes that to test model 1 adequately it must be demonstrated that there is a gender difference in this specific factor in early adolescence and that the presence of this factor is related to depression in both boys and girls. It must also be shown that gender differences in this factor account for significant portion of observed gender difference in depression.

The second model proposed to account for the emergence of gender differences in depression proposes that the factors leading to depression are different for males and females. It is further posited that in preadolescence the factors, although different, are equally prevalent, consequently, there is no gender difference during this period. In early adolescence the risk factors for both males and females increase however, they increase more for females relative to males. Nolen-Hoeksema & Girgus (1994) have argued

that to test this model adequately researchers need to demonstrate a significant relation between some factors and depression in females but not in males and vice versa. It is also necessary to show that the presence of risk factors for girls increases at early adolescence and that the presence of risk factors for boys does not. Nolen-Hoeksema (1994) notes that without these extra steps all that would be demonstrated is that there are different correlates with depression in girls and boys. Very little would be known about why girls are more vulnerable to depression than boys.

Finally model 3 is an interactive-model, similar to the diathesis-stress model, which suggests that prior to adolescence girls are more likely than boys to have characteristics which put them at a higher risk for depression. It is only when these characteristics interact with the challenges of early adolescence, that girls develop higher rates of depressive symptomatology. Similarly to model 1, model 3 proposes that the factors which cause depression are equivalent for preadolescent males and females. In contrast to model 1, however, model 3 does not propose that these risk factors become more prevalent in females, rather, that females are already more at risk than males during preadolescence, however, depression does not manifest until early adolescence, when females must face challenges of early adolescence. Nolen-Hoeksema & Girgus (1994) have suggested that to test model 3 a longitudinal study is needed in which levels of depression, risk factors for depression and challenges which may interact with risk factors are examined in both males and females. These factors need to be tracked from preadolescence through to early adolescence and beyond to establish long term effects. To provide support for this hypothesis it would have to be demonstrated that children who enter adolescence with certain risk factors and face the challenges of adolescence are more at risk for depression that children who do not have the risk factors. In addition, it would have to be demonstrated that more preadolescent girls have these risk factors than boys.

A number of specific variables have been hypothesised to account for emergence of gender differences in depression at adolescence. These include biological changes of puberty, perceived body image, stressful life events, self-evaluation, personality characteristics, gender role stereotypes and social factors. All of the studies to date have examined gender differences in depressive symptoms in community samples, rather than depressive disorders or clinical samples. Consequently, the focus of this review will be on gender differences in depressive symptoms in the general population.

3. BIOLOGICAL FACTORS POSITED TO ACCOUNT FOR EMERGENCE OF GENDER DIFFERENCES IN DEPRESSION

3.1 GENETIC

Is has been hypothesised that gender differences in depression are the result of a mutant gene on the X chromosome. As females have 2 X chromosomes it is posited that they are more vulnerable to developing depression than males (Perris, 1966; Winokur & Clayton, 1967). Researchers have investigated the X-linkage hypothesis in a number of ways. They have examined the correlation between affective disorders and two abnormalities known to result from the mutations on the X chromosome, that is, red-green colour blindness and the Xg blood group (Nolen-Hoeksema, 1987). If there is a link between X chromosome mutation and affective disorders then there should also be high correlations between these abnormalities and affective disorders. A few family studies investigating families of individuals suffering from affective disorders have found that relatives who show affective disorders also tend to have the colour blindness or the Xg blood group. Nolen-Hoeksema (1987) notes, however, that the family pedigrees in these studies has often been incomplete and the statistical significance of the correlations minimal. Moreover, there is debate as to whether the loci of colour blindness and Xg blood group are near each other (Gershon & Bunney, 1976). Researchers have also examined the transmission of affective disorders from parents to children. Is posited that if fathers carry the mutant X gene then only their daughters will carry the mutation as the father always give the X chromosome to girls, not boys. Thus one would not expect to see father-son pairs of affective disorder. If a mother carries the mutant X chromosome then her sons and daughters have an equal chance of caring the mutation. Nolen-Hoeksema notes however, that most family studies of X-linkage hypothesis have found more father-son pairs of affective disorder individuals that is compatible with transmission via the X chromosome. Gershon & Bunney (1976) for example, reviewed the data from a number of studies and found that father-son pairs of affective disorders was considerably higher than in the general population. Thus, it does not appear that adolescent females greater predisposition to depression is genetically determined. It is possible however, that genetic factors may be involved in the endocrine functioning which may be associated with penetrance of depression (Merikangas, Weissman, & Pauls, 1985).

3.2 PUBERTAL CHANGES

Change in rates of depressive symptoms occurs at the same time as a number of significant pubertal changes occur. These changes include hormonal and physical changes, as well as many psychological, behavioural and social changes. Some researchers have suggested that biological factors associated with puberty account for the female predominance of depressive symptoms at adolescence (e.g. Winokur, 1967; Brooks-Gunn & Warren, 1989; Rierdan & Koff, 1991).

(1) Puberty

The onset of puberty is difficult to determine for girls and boys. It is a time of rapid change, not only in physiology, but also in psychological and social areas. Puberty differs greatly between males and females and also within the sexes. In girls, the first signs (i.e. either breast or pubic hair development) of puberty appear between the ages of 8.5 years and 13 years. Girls experience a rapid growth in height of approximately 25.4 cm and a gain in body fat of approximately 10.9 kilos. Menarche occurs later in girls' pubertal development with the mean age of menarche being approximately 13 years (Marshall & Tanner, 1969). Menstrual cycles do not tend to regulate for two years following the onset of menarche (Faust, 1983). A number of biological and environmental factors appear to influence both the timing of menarche and the regulation of menstrual cycles. Body weight is one common factor which seems to be particularly influential. Girls who are inadequately nourished and underweight are more likely to have delayed menarche or cessation of menarche if it has already occurred (Warren, 1983). Boys pubertal development typically begins two years later than that of girls (Warren, 1983). In contrast to girls, boys' weight gain is in lean body mass and skeletal mass rather than in body fat. There is also considerable variation in the rate of boys' pubertal development. The genitalia begin to develop between the ages of 9.5 years and 13.5 years. Boys reach maturity between the ages of 13 and 17 years (Marshall & Tanner, 1970). Boys typically reach their maximum rate of growth at approximately 14 years. On average boys reach their peak height growth 2 years later than girls, but boys genitalia begin to develop only about 6 months later than girls breasts. Pubic hair appears about 1.5 years later in boys than in girls (Marshall & Tanner, 1970).

Adolescence is also a time of marked change in cognitive abilities. During middle childhood children are at a stage of, what Piaget (1954) described as, concrete operational thought. At this stage children tend to think about themselves and their world logically but in concrete terms. As children enter adolescence they move from concrete operational thinking to, what Piaget (1954) defined as, formal operations. Thought becomes more abstract, logical and idealistic. Adolescents become more capable of metacognitions in that they are able to think more about their own thinking processes and what other think of them. Piaget suggests that formal operational thought develops between the ages of eleven and fifteen years. Developmentalists, such as Elkind & Bowen (1979), have suggested that this introspection results in marked egocentrism in adolescents. Egocentrism is though to have two parts. The imaginary audience refers to the adolescents' belief that other are observing him/her. The personal fable refers to the adolescents' sense of personal uniqueness and indestructibility.

At the time of puberty adolescents are also faced with a number of developmental challenges. Kellerman & Katz (1977, cited in Slap, 1986), drawing on the work of both Freud and Erikson, has identified 3 main developmental tasks which are central to an individual's psychosocial development; the establishment of autonomy; psychosocial and psychosexual development and future orientation. Establishment of autonomy requires that the adolescent become emotionally and economically independent from parents. This typically begins during early adolescence (12-14 years) with the adolescent expressing decreasing interest in family activities and more resistance to parental advice. Kellerman et al (1977) have suggested that the adolescent's peer group gains increasing social importance and family conflict is likely to be at its peak. This is thought to diminish as the adolescent gains a separate identity from the family. According to Kellerman et al (1977) psychosocial and psychosexual development consists of four tasks; the acceptance of physical change, the establishment of relations with peers; the development of responsible behaviour and the evolution of a personal value system which is consistent with society. The rapid changes of puberty often result in the adolescents' preoccupation with self, concerns about normality and comparison with peers. This gradually decreases and attention shifts to maximising physical attractiveness. Initially relations with peers tend to be characterised by strong friendships with same-sex peers, however, as the adolescent matures dating and sexual experimentation replace the larger, same-sex social networks of early adolescence. The fourth developmental task of future

orientation generally occur in older adolescents (18-21 years) and involves the setting of future, realistic goals (e.g. vocation and lifestyle).

There are also substantial changes in the environment of children entering adolescence. Most children move from a structured school where the teacher-to-student ratio is relatively low to much less structured and bigger classes and schools. The child entering adolescence must also adapt to new structures, different and more difficult courses which require more self-discipline and other unfamiliar children (Nolen-Hoeksema, 1990). In addition, many children around this time begin part-time paid employment which exposes them to many more challenges such as needing increased self-discipline and responsibility, less time with friends and more opportunity for success or failure.

Clearly adolescence is a time of rapid and often dramatic change in physiological, psychological and social areas. This has lead some theorists to suggest that adolescence is a time of great emotional turmoil (Bell, 1987; Finklestein, 1980) which accounts for the increase in depressive symptomatology during adolescence. It has been argued for example, that children reach physiological maturity before they are psychologically ready to cope with the challenges that such maturity brings (Davies, 1940 cited in Nolen-Hoeksema, 1990). This is also thought to be a time of considerable parent-child conflict as the emerging adolescent tries to break away from their parents protective care. The result is the adolescent experiences rebellion, distress and depression. Overall, there appears to be little evidence to support the theory that adolescence is a time of turmoil (Douvan & Adelson, 1966; Offer, Ostrov, & Howard, 1981; Rutter, 1979; Alsaker & Olweus, 1993). Studies investigating the interaction between parents and adolescents have reported that, although the content of conflict changes, the frequency of conflict between parent and child does not increase from childhood to adolescence (Rutter, 1970; Offer, et al., 1981). Thus although the rate of depression increases from childhood to adolescence, depression only seems to be a problem for a minority of adolescents (Nolen-Hoeksema, 1990).

What is clear is that during adolescence there tends to be more depressed girls than depressed boys. The following section is a detailed and critical review of all the research to date which has investigated associations between gender and depressive symptomatology in adolescents. No research has been specifically designed to test each of the theories, however,

some of the research is relevant and allows tentative conclusions to be drawn in regard to which theories receive support and which do not.

As mentioned previously, the coincidence of pubertal change and emergence of gender differences in depression have led some researchers to suggest that the physiological changes of puberty account for female predominance of depression in adolescence (e.g. Winokur, 1967; Brooks-Gunn & Warren, 1989; Rierdan & Koff, 1991). The pubertal changes which have been implicated in the emergence of gender differences include hormonal changes, physical changes (i.e. the development of secondary sex characteristics), timing of pubertal development, pubertal status and the many psychological, behavioural and social transitions that accompany such change.

(2) Hormones

a) Introduction

In addition to genetic factors it has also be hypothesised that the predominance of depressive symptomatology in girls, emerges at puberty as a result of hormonal activity. Hormones are thought to activate specific behaviours through their influence on both peripheral and neural based processes which, in turn, may influence an individuals' perception of the environment and consequent behaviour (Buchanan, Eccles, & Becker, 1992). Between the ages of 5 and 9 years the hypothalamic-pituitary-adrenal axis is activated resulting in increased production and secretion of numerous adrenal steroid hormones, including androstenedione, dehydroepiandrosterone (DHEA) and dehydroepiandrosterone sulphate (DHEAS; Beach, 1975). In adults the hypothalamic-pituitary-gonadal axis maintains appropriate gonadal steroid concentrations in the blood by secreting gonadtropin-releasing hormone (GnRH) from the hypothalamus. GnRH increases secretion of the gonadotropins, luteinizing hormone (LH) and follicle-stimulating hormone (FSH) which results in an increase in the secretion of sex steroids. During childhood however, LH and FSH release from the pituitary is suppressed. Maturation of the hypothalamic-pituitary-gonadal axis results in gradually increasing levels of gonadotropins, which in turn lead to gradually increasing levels of gonadal steroids. In girls, estradiol a gonadol steroid begins to show marked increases after about the age 9 or 10 years. These increases continue until approximately 13 to 14 years. Progesterone secretion, which helps to regulate gonadotropin output,

increases in association with the onset of ovulation. In addition, girls' ovaries begin to produce low levels of testosterone, however, the ratio or testosterone to estradiol concentrations decreases over the early and middle adolescent years (Buchanan, et al., 1992). In boys of about 10 years of age testosterone, the primary gonadal hormone, begins to increase. Buchanan, et al., (1992) notes that between the ages of 10 and 17 years testosterone can increase as much as 20 times its initial concentration. The ratio of testosterone to estradiol is greater in boys than in girls, and increases with age.

b) Research

A number of studies have been conducted to investigate the role hormones may have in producing the gender difference in depression at adolescence.

Brooks-Gunn & Warren (1989) for example, conducted a study with 100 girls aged 10-14 years to investigate whether internal or external pubertal changes and whether social or biological changes were associated with negative affect. The girls were given a physical examination to assess pubertal development (Tanner, 1962) and had blood drawn to establish hormonal status. The researchers focused on estradiol because it is the principal gonadal hormone in girls and shows the largest increase in puberty of any of the hormones. Estradiol levels were categorised into four sub levels according to known effects of different amounts of estradiol on sexual development. Affective expression was assessed with the Youth Behavior Profile (Achenbach & Edelbrock, 1987) and life events were assessed with a questionnaire which consisted of 12 positive and 19 negative life events covering family, friend and school situations. The girls were asked to indicate if any of the events had occurred in the past 6 months.

Brooks-Gunn and Warren (1989) reported finding a curvilinear relation between hormonal contributions and depressive affect. Depressive symptoms increased as estradiol levels increased from the first to the third sub level, but decreased as levels of estradiol continued to increase from the third to the fourth level. These data suggest that girls are at increased risk for depressed affect when the system is first being activated (i.e. first 3 stages of the development of hormonal level). Hormones, however, accounted for only 4% of the variance in negative affect. In contrast, these researchers found that social factors account for more variance than hormonal pubertal factors (8%-18%), as did the interaction of negative life events and pubertal

factors (9%-15%). Girls who experienced a high number of negative life events were more likely to experience negative affect that those with a low number.

Brooks-Gunn and Warren (1989) concluded that while hormonal activation may be implicated in the emergence of depressive symptoms it may be over-shadowed by environmental events. Brooks-Gunn et al (1989) note that it is possible that when estradiol levels rise for the first time, as the endocrine system is activated, a corresponding increase in excitability or arousability occurs. Such excitability may result in more rapid and/or more intense mood fluctuations or, may result in girls being more sensitive to environmental stressors thereby experiencing negative affect. The researchers hypothesised that by late puberty girls may have adapted to higher estradiol levels and consequently hormonal associations with emotionality may alter. To account for the continued predominance of depression in female adults, the researchers suggested that lower estrogen levels may be associated with depressive affect. Whether the non-linear relation between depressive affect and estradiol is specific, or more generally related to changes throughout the endocrine system is not clear.

Brooks-Gunn et al (1989) note a number of limitations to their study. For example, hormones were sampled at one point in time thus the stability, particularly in regard to diurnal variation and monthly cyclicity is questionable. They also note that single-time blood draws may be more appropriate for examining general increases in hormones in the endocrine system rather than for individual hormones. The Youth Behavior Profile was used to measure negative affect thus the results cannot be generalised to apply to depressive syndromes/disorders. Finally, this study was conducted with white middle class girls, further limiting generalisation of the results.

Paikoff, Brooks-Gunn, & Warren (1991) extended Brooks-Gunn and Warrens' (1989) study and conducted a follow up study to investigate the associations between hormonal and physical status and depressive affect in community sample of 72 girls, aged 10 through to 14 years. Girls' endrocrinological status (estradiol, luteinizing hormone [LH], follicle stimulating hormone [FSH], testosterone and dehydroepiandosterone sulphate [DHEAS] were assessed at time 1. As with their previous study (Brooks-Gunn & Warren, 1989), Paikoff et al (1991) focused on estradiol levels which were subdivided into 4 levels according to amounts known to have effects on sexual development. Physical development (menarche,

secondary characteristics) and maturational timing were assessed at time 1, and 1 year later, at time 2. Depressive affect was assessed with the Depressed-Withdrawal Scale of the Youth Behavior Profile (Achenbach & Edelbrock, 1983) at time 1 and time 2. The Center for Epidemiological Studies of Depression Scale (CES-D; Radloff, 1977) was also used at time 2. Mothers' reports of depressed affect in their child was assessed with the Psychiatric Institute Depressive Mood Inventory (PI-DMI; Kandel, 1983) at time 1 and time 2.

Paikoff et al (1991) found that depressed affect as measured by the CES-D was significantly associated with prior hormonal levels, however, the Depressed Withdrawal Scale and the PI-DMI were not. Mean depression scores on the CES-D rose consistently from estradiol level 1 to level 4. Neither pubertal status nor pubertal timing were associated with reports of depressive affect. Prior reports of depressed-withdrawal affect were associated with later depressed-withdrawal affect while prior estradiol level was associated with the CES-D. Daughters' reports of depressive affect on the CES-D were associated with hormonal status however, mothers' reports of their daughters' depressive affect (PI-DMI) were not associated with their daughters' hormonal or physical status. Their was a low correlation between mother-daughter reports of depressive affect (r =.28 for Depressed-Withdrawal Scale and .18 for CES-D scale). This low correlation is consistent with other research (see Achenbach, McConaughy, & Howell, 1987 for review). This study is limited by the fact that only longitudinal data on measures of depressed affect were used, that is, longitudinal endocrine data were not collected. Endocrine assessment was only done at time 1, thus, questions remain in regard to the variability of hormones over hours or weeks. Subjects in the study were a non-random sample of upper middle-class girls, thus, generalisation of results are limited.

Susman, Dorn, & Chrousos (1991) conducted a study to investigate the relation between negative affect and gonadal and adrenal hormones in adolescents. Subjects were males (n=56) and girls (n=52) aged 10 years through to 14 years. The adolescents were assessed 3 times, 6 months apart. Serum levels of gonadotropins, gonadal steroids, adrenal androgens and cortisol were assessed. Stages of pubertal development were assessed according to Tanner criteria (Marshall & Tanner, 1969; Marshall & Tanner, 1970). Negative affect was measured with the Self-Image Questionnaire for Adolescents (SIQA; Offer, et al., 1981), the Internalising Behaviour Problem Scale from the Child Behavior Checklist (CBC; Achenbach & Edelbrock,

1983), and the Diagnostic Interview Schedule for Children (DISC; Costello, Edelbrock, Kalas, Kessler, & Klaric, 1982).

Susman et al (1991) reported that circulating levels of gonadal steroids and adrenal androgens were related concurrently to negative affect at two times of measurement. Hormone levels alone were predictive of negative affect 1 year later, but to a lesser extent than earlier negative affect. In the concurrent analyses relating hormones, pubertal stage and age to negative affect they found that boys who reported higher levels of negative affect were those at the higher genital stage or older stage, with lower testosterone and lower cortisol levels and lower dehydroepiandrosterone sulphate (DHEAS) levels. Girls who reported higher levels of negative affect tended to be those with higher testosterone and cortisol levels and lower DHEAS levels. For girls there was no finding of age or stage indicating that negative affect was a vulnerability factor at all stages of maturation, in contrast, for boys there was an increase in negative affect with progression through puberty. Susman et al concluded that gender differences in hormone levels in puberty should be considered along with psychological characteristics to examine association with depressive affect in adolescence. This study was based on non clinical sample of adolescents thus the findings cannot be generalised to clinical sample. In addition the sample size was relatively small and a high number of statistical analyses were conducted which also compromises the results.

Dysregulation of the anterior pituitary hormone prolactin has also been implicated in depression in adults. Waterman et al (1994) conducted a study to investigate prolactin dysregulation in adolescents. More specifically, Waterman, Dahl, Birmaher, Ambrosini, Rabibovich, Williamson, et al., (1994) measured plasma prolactin concentrations at 20-minute intervals over a 24-hr period in 49 adolescents with major depressive disorder (MDD) as classified by Research Diagnostic Criteria (Spitzer, Endicott, & Robbins, 1978a) and 39 normal control adolescents. Subjects had reached at least Tanner's stage III of pubertal development (mean age MDD= 14.8 years; mean age normal=15.5 years). Depression was assessed with the Schedule for Affective Disorders and Schizophrenia for School Age Children-present episode (K-SADS-P; Chambers, Puig-Antich, & Tabrizi, 1978) and K-SADS-E (the epidemiological version; Orvashel, Puig-Antich, Chambers, Tabrizi, & Johnson, 1982) was used to ascertain life time diagnoses. Waterman et al (1994) did not find any significant differences in the pattern, nor the amount of prolacting secretion in either the depressed

or normal group. There were significant gender differences with girls secreting more prolactin than boys during both sleep and wakefulness however, no significant gender-by-diagnosis interactions were found. Waterman et al (1994) note that their study is limited in that they did not control for menstrual phase at the time of testing, thus the possibility exists that between group differences in gonadal steroid status affect the results among girls.

(3) Pubertal Status And Timing Of Menarche

a) Introduction

Some researchers have suggested that it is pubertal status and/or timing of pubertal change which is associated with girls' increased vulnerability to depression, rather than hormonal changes per se. Tobin-Richards, Boxer, & Peterson (1983) for example, have argued that individuals appear to internalise a set of norms about what events should occur across the life span and also when such events should occur. Thus, when major life events, such as the changes associated with puberty do not occur as expected, i.e. when they are 'off-time' a crisis may result. Tobin-Richards et al (1983) suggest that to be 'off-time' in regard to life events mean that the individual is subject to various sanctions functioning in the social system. Such deviations may result in lowered self-esteem, a loss of self-cohesion and depression. It has also been suggested that there is a gender difference in the way boys and girls respond to the timing of their own pubertal change and in the way society responds to the timing of this changes.

b) Research

A few studies exist which have investigated the relation between pubertal status, pubertal timing and depression in males and females. Peterson, Sarigiani, & Kennedy (1991) for example, conducted a cohort-sequential longitudinal study examining the developmental pattern of depressed affect over early to middle adolescence in boys and girls. Subjects were 335 school adolescents who were assessed at 6th and 8th grade (11-13 years) and then followed up at 12th grade (17 years). Three aspects of early adolescent change were examined; pubertal timing, synchronicity of pubertal timing and school and family change. Pubertal timing was defined as age at peak height velocity (i.e. age at which growth was fastest). Height data collected over grades 6-8 were used to estimate age at peak height velocity. The relative synchrony between pubertal timing and school

change (transition from elementary to junior high or middle school) was indexed by a third variable identifying the extent of synchrony between them. Subjects were place in one of three groups. The first group included those adolescents who experiences peak pubertal change more than 6 months prior to school change. The second group consisted of subjects where school change and pubertal change were synchronous and the third group consisted of adolescents who experienced peak pubertal growth more than 6 months after the change from elementary to junior high or middle school. Family changes assessed were parental divorce or separation, death of family member, illness of family member and departure of a family member from the home. Depressed affect was assessed in the 12th grade with the Emotional Tone Scale from the Self-Image Questionnaire for Young Adolescents (SIQA; Peterson, Schulenberg, Abramowitz, Offer, & Jarcho, 1984), the Kandel Depression Scale (Kandel & Davies, 1982) and the Teenager or Young Adult Schedule (TOYS; Gittelman, Mannuzza, Shenker, & Bonagura, 1985). Social support was measured with The Father, Mother and Friend Closeness scales (Byth, Hill, & Theil, 1982).

Peterson et al (1991) reported that there were no gender differences in early adolescence but that a gender difference had emerged by 12th (17 years) grade. At this time girls reported more depressed affect and poorer emotional tone than boys. Peterson et al (1991) noted that the differences appeared to emerge at 8th grade (13 yrs) and to increase over subsequent years. They concluded that gender differences in depressed affect appeared to be related to the changes experienced in early adolescence. Pubertal change prior to or simultaneous with school change affected both boys and girls to a similar extent, however, both pubertal change prior to or simultaneous to school change is more likely to occur in girls than boys. Thus, girls are more likely to experience depression than boys. In addition, early pubertal timing showed only long term negative effects for girls. Together these two findings provide some insight as to why the gender difference emerges at adolescence.

The results of this study stand in contrast to those of Paikoff, et al., (1991; discussed above) who found no significant relation between pubertal timing and pubertal status and depression. Peterson et al's (1991) study is limited in that it compared successive cohorts thus, it is possible that the results may be due to differences in the cohorts, rather than between the sexes. Moreover, the study was based on community sample of school children and only depressed affect was measured, rather than depressive

symptoms, thus generalisations are limited. In addition, the measures of depressed affect and social support are not commonly used in the literature investigating gender and depression thus, comparisons with other studies are limited.

Some writers have suggested that it is the timing of menarche which is associated with the emergence of depressive symptoms in girls at adolescence. As discussed previously, menarche typically occurs between the age ranges of 10 to 16 years with a mean age of 12.8 years (Faust, 1983). A number of researchers have reported that the occurrence of menarche results in significant change in body image (Koff, Rierdan, & Silverstone, 1978)), revision of self-concept (Simmons & Blyth, 1987), and expectations of, as well as actual changes in social standing (Simmons, Blyth, & McKinney, 1983). In line with Tobin-Richards, et al (1983) suggestion, Rierdan & Koff (1991) have also noted that adolescent girls have ideas about the normative timing of developmental events such as menarche. Ruble & Brooks-Gunn (1982) for example, found that the preferred age tends to be between 12 and 13 years, and if girls differ from this, the preference is to be later rather than early. Rierdan and Koff (1991) have noted that very early menarche is perceived by girls to be a deviation from what is normal thus, early menarche is not seen as being simply early but as very undesirable. Consequently, early menarcheal timing is thought to have significant psychological impact.

Rierdan & Koff (1991) conducted a study to investigate the relation between timing of menarche and depression. Girls who reached menarche early were defined as those girls who reached menarche by the autumn of 6th grade (11 years). These girls were compared with girls who reached menarche by the 7th grade in order to determine if early menarche, rather than menarche per se, was associated with depressive symptoms. Subjects in their study were 488, 6th graders (mean age = 11.2 years; 308 premenarcheal, 28 postmenarcheal) and 152 seventh graders (mean age 12.5 years: 106 premenarcheal and 46 postmenarcheal). Depression was assessed with the Beck Depression Inventory, short form (BDIs; Beck & Beck, 1970). Eighteen percent of the sample scored in the moderate to severe depressive range (scores >8). Rierdan et al (1991) found that very early menarcheal timing was associated with higher levels of depressive symptoms. In contrast, seventh grade post menarcheal girls were not significantly more depressed than their premenarcheal peers. Thus, it did not appear to be

menarche per se, but rather the timing of menarchy that was associated with depressive symptoms.

Conclusions from this study are compromised by the fact that post menacheal girls were compared to their premenarcheal peers. While is was assumed that post menarcheal peers were normative it was not known which of these girls would reach menarche within 'normal' time parameters and which would go on to become late in timing. Differences in these girls, which may affect the results, would have be obscured or averaged out in this study. The results of this study are also limited to the short term impact of early menarche rather than long term impact. As Rierdan et al (1991) note the increased levels of depressive symptoms in girls with early menarche may be transient rather than chronic. It is also possible that while short term effects increased depressive symptoms the long term effect may be in some other area of psychological functioning (e.g. self-evaluation). Longitudinal research is needed to examines these hypotheses and also to ascertain whether there is a similar association between early menarcheal timing and depressive disorders.

A number of empirical studies, while not specifically examining depressive symptomatology or depression, have investigated correlates of early and late maturation in males and females. In general, they have reported that boys early maturation tends to bring social advantages, whereas, late maturation results in disadvantages. Early maturers have be found to be more relaxed, less dependent, more self-confident and more attractive to both adult and peers (Jones, 1950; Mussen & Jones, 1957). In contrast, a number of studies suggest, that for girls, early maturation has psychological and social costs, including lack of popularity and greater internal turmoil (Peskin, 1973). Simmons, et al (1983) have reported that the effects of puberty tend to be specific rather than general. They investigated the impact of pubertal development in 924 non-depressed school children and found a non-consistent impact of pubertal development on global self-esteem, overall levels of depression-happiness, degree of self-consciousness, perceived evaluation of parents or on other indicators of affective parental relationships. In contrast, there were negative effects of pubertal development on girls body image, relationships with members of the opposite sex, level of independence, academic performance and extent of behaviour problems in school. In regard to early pubertal change Simmons, et al (1983) reported that this depended upon the dimension at issue. They

reported that early development was negative for girls body image, school performance and school behaviour, while it was positive in terms of popularity with the opposite sex and independence. Studies with non-depressed children also indicate that girls who experience multiple changes in adolescence appear to be more at disadvantage than boys in similar situation. Simmons, Blyth, Van Cleave, & Bush (1979) for example, have reported that girls who have recently experienced multiple changes (i.e. changed schools, earlier pubertal development and started to date) have the lowest self-esteem. In contrast, early pubertal development in boys was an advantage for self-esteem.

3.3 SUMMARY

Overall, there is no consistent evidence that the observed gender difference in depressive symptoms is due to genetic factors. Cloninger, Christiansen, Reich, & Gottesman (1978, cited in Nolen-Hoeksema, 1987) has suggested that the most common psychiatric disorders are unlikely to result from major chromosomal abnormalities or individual abnormal genes. Rather, these disorders are likely to be the result of an aggregation of minor genetic abnormalities and other familial risk factors which influence that individuals' risk for a particular disorder. Individuals may have a threshold of vulnerability, which if exceeded, results in manifestation of the disorder. Females, for example, may have a lower threshold than males for developing depression, whereas, males may have lower threshold than females for other disorders (e.g. behavioural disorders).

The few existing studies investigating the relation between hormonal changes and depressive symptoms in early adolescence have not found a strong relation between higher rates of depressive symptoms in girls and hormonal changes. While some studies (Brooks-Gunn et al, 1989; Paikoff, et al., 1991) have found that the activation of hormones was implicated in depressive symptomatology in girls this association was weak and hormonal levels did not appear to affect depressed mood once hormone production had stabilised in mid-adolescence. It appears that the association between psychosocial factors and depression are just as, if not more important than hormonal factors. The association between puberty and depression may not be one-way. Is possible that negative affect in puberty may be both a cause and effect of puberty-related hormone changes.

Stressful events may modify the concentrations of hormones and thereby alter the pace and maturation of puberty.

There appears to be significant gender differences in the ways males and females respond to the timing of the changes associated with puberty and in the way society responds to the timing of these changes. In contrast to males, females experience early and late pubertal timing more negatively. Some researchers have suggested that early menarcheal timing results in vulnerability to wide variety of psychopathology. Brooks-Gunn (1987) for example, has reported more dieting behaviour and higher scores on a psychopathology scale and Simmons & Blyth (1987) have reported more school problems among early maturing girls. Becoming an adult in Western society does not appear to bring the same social advantage for a female as it does for a male. As Tobin-Richards, et al (1983) suggest, in contrast to boys where physical maturation carries with it several social advantages (athletic prowess, leadership roles), physical maturation for girls may carry more explicit sexualised meanings and may generate concomitant social responses. For females these negative consequences of early maturation may lead to a vulnerability to depression. Results such as these reinforce the importance of examining biological changes of puberty in the context of both normative and non-normative changes in other aspects of the developing adolescent's life. Clearly, changes at puberty are not only biological but carry psychological meaning to the young person experiencing such changes and also have social meaning to others.

During the transition from childhood into puberty, females, more than males, tend to have to adapt to multiple, simultaneous stressors. Development of secondary sex characteristics in girls such as breasts and pubic hair occurs, on average, 2 years earlier than the development of genitals and growth in muscle mass in boys. As a result of this earlier maturation, girls are more likely than boys to experience concordant stressors. For example, girls are more likely be making the move from a small intimate school to a large impersonal high school at the onset of puberty (Peterson et al, 1991). Overall, it appears that it may be more difficult for girls to adjust to negative life events if they are simultaneously undergoing the physical changes of puberty, thereby putting then at increased risk for depression.

3.4 MODELS

The data in regard to hormonal changes provide little support for either model 1 or 2. Model 1 would hypothesise that hormonal activity in both adolescent males and females could lead to depression in both sexes, however, males do not experience the same dyregulation of hormones that girls do at early adolescence, thus leaving more girls likely than boys to becomes depressed. There is little evidence, however, that increased hormonal activity is associated with depressive symptoms for girls. In regard to physical changes associated with puberty, model 1 would predict that changes associated with puberty could lead to depression in both males and females, however, at puberty girls experience more changes than boys, thereby leading to depression. The research suggests, however, that males and females perceive the timing and changes associated with puberty differently. Thus while pubertal change may be associated with depression for females, this is not the case for males.

Similarly to model 1, model 2 would predict that although risk factor are different for boys and girls in preadolescence, the risk factor would increase more for girls in early adolescence. As discussed above, few studies have reported a consistent relationship between higher rates of depressive symptomatology in girls and hormonal changes at puberty, as would be predicted by model 1 and model 2. In regard to physical changes associated with puberty, the research provides some support for Model 2. In early adolescence the risk factors for females increase compared to males. The research suggests that as the onset of puberty is, on average, 2 years earlier for girls than boys, girls are more likely than boys to experience simultaneous physical, psychological and social changes which may make them more vulnerable to depression.

Model 3 would predict, that hormonal and other pubertal changes in girls represent challenges that interact with pre-existing risk factors for depression which in turn lead to depression. Current research does not enable evaluation of this hypothesis. The possible interaction of body image and puberty will be discussed below.

3.5 METHODOLOGICAL PROBLEMS

Angold & Worthman (1993) has noted that several points need to be considered in the relation between puberty and depression. Firstly, the earliest hormonal changes in puberty are not reflected in visible morphologic change and few studies have investigated the possible psychological effects of these early endocrine changes. Secondly, the neuroendocrine processes which initiate puberty occurs over a time (9-11 years) frame when rates of depression probably begin to rise in girls and possibly decrease in boys. Thus, it is important to study endocrine changes in late childhood and to use the earliest elevations of gonadotropins and gonadal steroids as well as development of morphologic change as markers of developmental maturation. Finally, the pattern of relation between endocrine and morphologic change is different in males and females. For example, as indicated above, most growth and sex character development occurs in girls in the first half of puberty and before menarche, in contrast, extensive endocrine changes occur in boys before the visible physical signs of puberty appear. Thus, although it is generally suggested that, in boys puberty occurs 2 years later than girls this depends on the marker utilised. Girls reach peak height velocity before boys, however, the relative timing of menarche in girls and the first emission in boys occur only a little later in boys than girls (Angold & Worthman, 1993). In regard to menarche Brooks-Gunn & Warren (1985) has noted that while menarche is a useful measure, in that information in regard to onset is easily collected, raises few concerns with parents, school administration or girls themselves and is reliably ascertained through self-report, it occur relatively late in the pubertal process and thus, is not adequate for the classification of status or timing in girls under the age of 12 years.

Angold & Worthman (1993) has delineated several weaknesses in the current literature which contribute to the uncertainty in this area. (1) None of the studies of child and adolescent psychiatric epidemiologic studies have employed adequate measures of pubertal status; (2) No studies have investigated the degree to which rise in depression in girls is associated with pre-menstrual mood symptoms; (3) Many relevant endocrine studies have been compromised by small sample size and limited measures of psychopathology and none have examined rates of depressive disorders; (4) The majority of endocrine studies have not employed epidemiologically adequate sampling strategies, resulting in number of clinical studies but few

normative studies based on large sample sizes; (5) Studies which have examined psychiatric problems and sex hormones have typically measured single hormones and the results have been unhelpful, however, studies measuring multiple hormones have used multiple statistical tests with relatively small samples thereby compromising interpretations; (6) No studies have covered the complete age-rage of puberty and few have included any longitudinal component. Few studies have focused on the impact of change in pubertal status and its relation to depression; (7) Researchers have not given sufficient theoretical attention to the complex relation between puberty and depression; (8) Pubertal status cannot be adequately described by one single parameter. Brooks-Gunn & Warren (1985) have delineated a number of parameters of pubertal change that need to be considered simultaneously in research; (a) maturational status, timing, rate and synchrony; (b) Differential salience of maturational events; (c) The personal meaning of maturational events. Most studies of the timing of pubertal change have related timing to an external or objective set of criteria; few have assessed the individuals personal sense of time and timing; (d) the environmental, cultural and social effects on puberty; (e) Consideration needs to be given to whether each of these factors are best understood as a vulnerability or precipitating factor; (9) No studies of a representative population have employed methods adequate enough to simultaneously examine possible relations between hormones, morphological change, psychiatric status and social factors, longitudinally; (10) Most studies have measured depression in terms of scaled scores, however, the study of rates of individual symptoms is also needed as there is evidence that age and gender do not affect all symptoms of depression equally. Finally it is not clear if the short term effects of puberty are lasting.

4. PSYCHOSOCIAL FACTORS POSITED TO ACCOUNT FOR THE EMERGENCE OF GENDER DIFFERENCES IN DEPRESSION

4.1 BODY IMAGE

(1) Introduction

Adolescents' perception of their body appears to be intimately linked to their sense of well being. Havighurst (1972) has suggested that one of the developmental tasks of adolescence is the acceptance of one's body and adaptation to effective use of it. Further, a number of researchers have demonstrated that there is a significant correlation between self-esteem or self-concept and satisfaction with body characteristics or physical attractiveness, and that this relation is stronger for females than males (Lerner & Karabenick, 1974; Tobin-Richards, et al., 1983). Hsu, (1989) notes that the cultural ideal (lean, lithe, early pubertal figure) of physical attractiveness is acquired early in the pre-school years and by the time children reach the age of seven or eight years their concepts about physical attractiveness are very similar to those of older adolescents.

Studies investigating non-depressed adolescent's perception of their body image have found significant gender differences in the ways males and females evaluate their bodies. In general, females are more likely to evaluative their bodies negatively in comparison to non-depressed males. Dornbusch, Carlsmith, Duncan, Gross, Martin, Ritter, et al., (1984) for example, have reported that during puberty adolescent females negatively evaluated the body fat associated with normal sexual development whereas, pubertal changes increased males satisfaction with their bodies. Wardle & Beadle (1986, cited in Hsu, 1989) has reported that girls as young as 12-13 years expressed concern about their fatness, had already begun to diet and felt guilty about eating. Tobin-Richards, et al (1983) have reported that there appears to be a strong relation between the timing of maturation and body image evaluation. In boys there appears to be a linear relation with early maturation being associated with a more positive image and greater sense of attractiveness while late maturation is associated with more negative body image. Facial hair, rather than body size appears to be the pubertal factor which most influences boys' positive perceptions of the self (Tobin-Richards, et al., 1983). In girls, the relation is more curvilinear with early maturation and late maturation being associated with more negative body

image and decreases in their sense of attractiveness. Those who perceive themselves as being late tend to feel better about themselves than those who are earlier. Being 'on-time' is related to a more positive body image and greater feelings of attractiveness. In contrast to boys, girls perceptions of and satisfaction with weight tends to one of the most important variables in determining positive perceptions of self. The further a girl is along in puberty the more likely she will tend to perceive herself as heavier and be less satisfied with her weight (Tobin-Richards, et al., 1983).

A number of writers have suggested that females dissatisfaction with their body image accounts for the emergence of gender differences in depression. McCarthy (1989) for example, has proposed that the gender difference in body dissatisfaction and its association with self-esteem my account for the emergence of gender difference in depression in early adolescence. Girls dissatisfaction with their bodies is thought to come from the realisation of a discrepancy between societies ideal of thin, prepubescent body shape for females and the fact that they are gaining weight as they mature. This may also be the result of differing socialisation experience which result in boys acquiring body images that are perceived as being more positive and more resilient than body images of girls (Rierdan, Koff, & Stubbs, 1988). There is evidence that girl's focus on their body image may start long before puberty (Cole et al, 1991).

(2) Research

A few studies have been conducted to investigate the relation between body image and depressive symptoms in community samples of adolescents. Allgood-Merten, Lewinsohn, & Hops (1990) for example, investigated a number of psychosocial factors, including body image, hypothesised to be associated with depressive symptomatology and with the preponderance of depressed females in a school sample of adolescents (13-18 years). In particular, they looked at sex, age, self-esteem, stressful recent events, body image, self-consciousness and the masculine stereotype. Self-Esteem was measured with the Rosenberg Self-Esteem Inventory (Rosenberg, 1979), stressful life events was assessed with a Major Life Events Inventory and Recent Life Events Inventory developed for the study. Body image was measured with the Offer Self-Image Questionnaire, Body Image subscale (OSIQ; Offer, Ostrov, & Howard, 1977) the Body-Self Relation Questionnaire (BSRQ; Winstead & Cash, 1984) and the Body Parts Satisfaction Scale (Berscheid, 1973). Self-consciousness was measured with the Self-consciousness Scale (SCS; Burnkrant & Page, 1984) and masculine

stereotype was measured with the Personal Attributes Questionnaire Short Version (PAQ; Spence & Helmreich, 1978). Depression was assessed with the CES-D (mean CES-D score was 19.12 SD=11.74). Allgood-Merten et al (1990) reported that female adolescents reported more depressive symptoms, self-consciousness, stressful recent events, feminine attributes and negative body image/self-esteem than boys. Furthermore, Allgood-Merten et al (1990) noted that hierarchical multiple regression indicated that the most important variables in reducing the gender difference were body image and self-esteem. This led Allgood-Merten et al (1990) to propose that "pending replication" these results suggest that if adolescent girls felt as physically attractive, effective and generally good about themselves as their male peers did they would not experience so much depression. This research is limited in that there are no independent data for some of the measures used in the study. In addition, subjects were largely white middle and upper-middle class.

Similarly, in their study of gender differences in depressive responses of adolescents on the BDI, Baron & Joly, (1988; previously discussed) reported that the relationship between physical self-concept and depression is especially important to female adolescents. Hsu (1989) has cited a number of other studies (Kaplan, Busner, & Pollack, 1988; Kaplan, Nussbaum, Skomorowsky, Shenker, & Ramsey, 1980; Noles, Cash, & Winstead, 1985) which have found that depressed individuals, particularly if they are young, Caucasian and female, are more likely to go on a diet to control or lose weight.

Not all studies have produced similar results, however, Rierdan, et al (1988) for example, assessed the relation between depression and body image in 9th grade (14 years) adolescents (n=103) using the short-form BDI (Beck & Beck, 1970) and the Body Cathexis Scale (Secord & Jourard, 1953). Rierdan et al (1988) reported that there was no overall gender differences in the level of depressive symptoms. They found that depressed adolescents were more dissatisfied with their body image than non-depressed adolescents. Depressed males and females were equally dissatisfied with their body image. Similarly to other research, non-depressed females were more dissatisfied with their body image than non-depressed males. Thus while non-depressed adolescent boys appeared to have a more positive body image compared to non-depressed adolescent girls, this was not the case for depressed males and females, who were equally dissatisfied. Rierdan et al (1988) suggested that although boys may be more accepting of their bodies

than girls this does not protect boys from body dissatisfaction when they are depressed. The relatively small size of this sample and the fact that subjects in this study were all white and middle class limits generalisation of these results.

Rierdan, Koff, & Stubbs (1989) conducted a longitudinal study to investigate the importance of body image in 500 depressed early adolescent females. Depression was assessed with the Beck Depression Inventory, short form (Beck & Beck, 1970). Adolescents' degree of satisfaction with their bodies was measured with The Body Cathexis Scale, modified form (Secord & Jourard, 1953) and the Body Experience Scale. The latter was developed by Rierdan and Koff to assess dimensions of bodily experience which were absent from the former scale. The adolescents were assessed during autumn (T1) and spring (T2) of a school year. Rierdan et al (1989) identified 4 groups of subjects; persistent depression, remitting depressed, onset depressed and stable non-depressed. Rierdan et al (1989) reported that knowing how depressed girls evaluated their bodies significantly aided in distinguishing those girls whose depression would be persistent from those for whom depression would be transient. Interestingly, knowing how non-depressed girls evaluated their bodies did not contribute to the identification of girls at risk. Rierdan et al (1989) concluded that a relatively positive body image does not offer substantial protection against the occurrence of depression, although it seemed to decrease the likelihood that depression would be persistent. Thus the relation between body image and depression was different for persistently and transiently depressed girls. Rierdan et al (1989) results indicate that discriminating the onset and course of adolescent depression in studies is important. Further research is need to ascertain whether these results would also hold for adolescent males.

(3) Summary

Overall, the studies are limited and results inconsistent thus the relation between body image, depression and gender remains unclear. Some researchers have found a gender difference in that depressed males evaluate their body image positively, whereas, depressed females are more likely to negatively evaluate their body image (Allgood-Merten, et al., 1990; Baron & Joly, 1988). Other researchers, however, have suggested that depressed males and females are equally susceptible to evaluating their body image negatively (Rierdan, et al., 1988). This indicates that, once depressed,

the mechanism of action may be similar for both sexes. There does appear to be consistent evidence that non-depressed females are less satisfied with their body image than are non-depressed males. Girls tend to perceive the physical changes to their bodies that accompany puberty much more negatively. As Nolen-Hoeskema (1994) note girls dislike the weight gain in fat and the loss of long, lithe prepubescent look that is idealised by society. In contrast, boys like the increase in muscle mass and other changes to their bodies associated with puberty. In addition, the research indicates that girls who reach menarche early dislike their bodies considerably more than their 'ontime' or 'late' peers and, compared to males, females experience early and late pubertal timing more negatively. Knowing how females evaluate their bodies does not appear to provide identification of those at risk of developing depression, however, it may assist in identifying those adolescent females whose depression may be persistent from those were the depression is more transient (Rierdan et al, 1989).

There some limited evidence to suggest that depressive symptoms are associated with physical attractiveness in preadolescence (Cole, 1991), thus body image alone cannot account for the emergence of gender difference in depressive symptoms. The culmination of a number of vulnerability factors, rather than one specific factor, may better account for this phenomenon. Girls are more likely, than boys to experience negative life events or stressors at the same as they are undergoing physical (internal & external) changes to their bodies. In addition, these pubertal changes are more likely to be perceived negatively by girls who already have a poor opinion of their bodies. As Rierdan, et al (1988) have suggested when body attractiveness and competence become important in adolescence, the foundation may be already laid for girls to be less satisfied with their bodies and therefore, to have lowered self-esteem and depression.

(4) Models

Overall, the research discussed here provides some support for model 1. Boys and girls who are dissatisfied with their bodies are more vulnerable to depression (Rierdan et al, 1988) however, girls are more likely to dislike their bodies during puberty so are more likely to become depressed. Moreover, it has been shown that girls' more negative body image is associated with increased levels of depression symptoms relative to boys (Allgood-Merten et al, 1990; Rierdan et al 1988). Model 2 would posit that body image was only related to depression for girls not boys. It appears however, that although non-depressed boys perceive their body image more

positively than non-depressed girls, once depressed, they are equally likely to evaluate their bodies negatively. The research does provide some support for Model 3. There is evidence that there are gender differences in both body image and depression in preadolescence which may make girls more vulnerable to depression. It is possible that this vulnerability, probably in combination with other vulnerabilities, interacts with the challenges of puberty/adolescence. These challenges include; (a) Pubertal timing: Girls are more likely than boys to experience both early and late pubertal timing negatively and therefore be more vulnerable to depression; (b) Hormonal activity: Although there is a weak relation between hormonal activity and depressive symptoms in girls, its simultaneous occurrence with other challenges may increase the likelihood of depression; (c) Physical changes of puberty: Girls are more likely than boys to experience physical changes of puberty as negative which has been associated with increased levels of depressive symptoms in girls; (d) Simultaneous stressors: There is evidence that adolescents who face negative events and the time that their bodies are undergoing physical change are at increased risk for distress and depression (Brooks-Gunn et al 1989). As girls tend to reach puberty earlier than boys, they are more likely to experience simultaneous stressors.

Overall, however, the majority of studies investigating depressive symptoms and body image utilise cross-sectional analyses. Thus conclusions cannot be drawn about the temporal, let alone causal relation between poor body image and depressive symptomatology. Longitudinal research, from childhood through to adolescence, is needed in which levels of depression, risk factors for depression and challenges which may interact with risk factors are examined in both males and females.

4.2 STRESSFUL LIFE EVENTS

(1) Introduction

Substantial evidence has accumulated in the adult literature to suggest that stressful life events often precede an episode of depression (Lewinsohn, Hoberman, Teri, & Hautzinger, 1988; Brown & Harris, 1978; Paykel, Meyers, Dienelt, Klerman, Lindenthal, & Pepper, 1969). This has lead some researchers to suggest that there is a significant relationship between stressful events, gender and depression in adolescents (Gove & Herb, 1974; Peterson, et al., 1991). More specifically, girls are thought to experience more

stressful events and/or respond to these events differently from boys, thereby leaving girls more vulnerable to depression. Gove & Herb (1974) for example, has suggested that girls face much more stress in adolescence, as a result of internalising the feminine gender stereotype, which results in girls being dependent on others and being non-assertive. Moreover, if girls reject the feminine stereotype they are likely to be rejected by their peers. Both of these factors predispose girls to depression. Peterson, et al (1991) has noted, that in addition to stressful events, children and adolescents experience age-related or normative developmental stresses (e.g. school entry, addition of sibling). Girls, however, are thought to experience more of these challenges than boys, which accounts for the gender difference in depression. Nolen-Hoeksema (1987) has proposed that these differences are not so much due to higher prevalence of stressors for females but are the result of the different ways males and females respond to their own depressive symptoms. Nolen-Hoeksema (1987), suggests that females are more likely to exhibit a ruminative response style, which accounts for, at least in part, gender differences in depression. According to Nolen-Hoeksema (1987) individuals with a ruminative style of responding to depression tend to focus inward on their symptoms and on the possible cause and consequences of their depression. In contrast, individuals with a distracting style of responding to depression try to distract themselves through activities or other means. A ruminative response style is thought to be associated with longer and perhaps more severe depressive episodes than a distracting response style. Research examining the relation between stressful events, depression and gender has relied on school samples of adolescents who have self-reported depressive symptoms. The type of stressful event studied has varied considerably and includes living conditions, demographic variables, hassles, and life transitions.

(2) Research

Gore, Aseltine, & Colton (1992) conducted a study with 1208 high school students (age 14-16 years approx.) to examine the relations between life stress and depressive symptoms. The latter was measured with the CES-D. Gore et al (1992) described using a 61-item inventory to measure stress. This was based on five classes of recent stressors; personal, family and friend's events and relationship problems with family or friends. Two measures of social support were used; family and friendship support. Finally, the socio-economic status and participants physical health status were assessed. Only results pertaining to gender differences are discussed here. Gore et al (1992) found that females reported experiencing

significantly more depressive symptoms than males. Gore et al (1992) also found that females reported significantly higher levels of exposure to every measure of stress, however, neither stress nor parental or friend's support accounted for the significant gender difference in depressive symptoms. In addition, they found no evidence of gender difference in vulnerability or response to stress. Only socio-economic status (SES) was significantly related to depression among females with higher levels of SES associated with lower levels of depression. Although living in a low SES family affected boys' well-being, it did not influence boys' depressive symptoms. Gore et al (1992) suggest that this gender difference may be due to a different set of social resources and the socialisation environment offered to boys and girls by parents in lower SES groups. This latter result highlights the importance of considering background factors which may increase the risk of depression. This study is limited by the use of unknown and unproven measures.

Some researchers have suggested that adolescent girls are more at risk of depression as a result of simultaneous stressful events or change. Peterson, et al (1991; discussed previously), for example, conducted a cohort-sequential longitudinal study to examine the developmental pattern of depressed affect over early- and mid-adolescence in school samples. Adolescents were assessed in the 6th (11 years) through to 8th grade (13 years) and then again in the 12th (17 years) grade. Three aspects of early adolescent change were investigated; pubertal timing, synchronicity of pubertal timing, and school and family change. Depressed affect was assessed with three measures; The Emotional Tone Scale from the Self-Image Questionnaire for Young Adolescents (SIQA; Peterson, et al., 1984), The Kandel Depression Scale (Kandel & Davies, 1982) and Teenager or Young Adult Schedule (Gittelman, et al., 1985). Peterson et al (1991) also analysed social support and coping responses. Peterson, et al (1991) reported that there was no gender difference in early adolescence but that a gender difference had emerged by 12th (17 years) grade. At this time girls reported more depressed affect and poorer emotional tone than boys. Peterson et al (1991) noted that the differences appeared to emerge at 8th grade (13 years) and to increase over subsequent years. They concluded that gender differences in depressed affect appeared to be related to the changes experienced in early adolescence. Those changes with the most consistent long term negative affects were early pubertal timing and synchronous school and pubertal change. They note that this is more likely to occur in girls than boys and thus provide some insight as to why the gender difference emerges at adolescence. Pubertal development and early

adolescence were associated with changes in the parent-child relationship, however, the results indicate that if closeness is maintained with parents this moderates the long term negative effects of early adolescent changes. In contrast, social support from intimate friendships did not moderate the negative effects associated with change. Interestingly, Peterson et al (1991) found that negative family events had an enhancing effect among boys in early adolescence. They suggest that negative events during early adolescence may lead to a change in the developmental trajectory of depressed affect among boys that has a continuing effect on development long after the occurrence of the events. Peterson et al (1991) note, that Rutter (1981), has proposed that stressful events may have a "steeling" effect if these events lead the child or adolescent to develop effective skills for coping with stress or increases their confidence in the skills they already possess. Thus, Peterson et al (1991) suggest that negative family events during adolescence, induce boys, but not girls, to develop coping responses that are effective in reducing depressed affect. Peterson et al (1992) point out that this interpretation is consistent with Nolen-Hoeksema's (1987) conclusion that gender differences in depression are the result of differences in methods used to cope with stressful problems and the emotional distress that often results from them. It is important to note that the findings of this study only relate to depressed affect, rather than depressive symptoms, thereby limiting generalisations.

Simmons, Burgeson, Carlton-Ford, & Blyth (1987) examined the impact of several simultaneous major life transitions and pubertal status in a school sample of 237 early adolescents (11-12 years). In particular, they looked at the effects of school transition, pubertal development, early dating behaviour, residential mobility, and family disruption on students' self-esteem, academic grade point average and participation in extra curricular activities. Global self-esteem was measured by the Simmons and Rosenberg Self-Esteem Scale (Simmons, Rosenberg, & Rosenberg, 1973). Grade point average was calculated from school records and the children were asked to write a list of the extracurricular activities they participated in. Their findings indicated that there were negative consequences for adolescents who must cope with several transitions at once. Both males and females exhibited declines in grade point average and extracurricular participation as they encountered more life transition stressors. For females the effect for grade point average was curvilinear, indicating that after some time, each of the subsequent life changes makes the overall coping process more difficult. Only girls suffered losses in self-esteem when the number of life changes

they experienced increased, thus, Simmons et al (1987) concluded that, in terms of self-esteem, girls appear more vulnerable to these life transition stressors than boys. They suggest that the girls' greater vulnerability may be due to the fact that value systems of girls change in adolescence with greater emphasis on the importance of peer regard and looks (Simmon et al 1989). Thus, girls may react more unfavourably to the disruptions of peer networks that occurs with school transition, as well as to the uncertain effects that pubertal change have on physical appearance. In previous work Blyth, Simmons, & Carlton-Ford (1983) demonstrated that students, especially girls, making the transition from an elementary school to a junior high school in grade 7 were at a disadvantage compared to students who remain in an elementary school setting until grade 9, particularly in regard to self-esteem. Simmons et al did not measure depressive symptomatology. Consequently, although finding that there was an association between coping with several transitions and a decrease in self-esteem, it is not clear from this study that this results in an increase depressive symptoms.

Not all studies have found that a relationship exists between stressful events and depression in females. Friedrich, Reams, & Jacob (1988) for example, examined gender differences in a number of psychosocial variables thought to protect or exacerbate manifestations of depression. In particular, Friedrich et al (1988) looked at peer social support, familial support and stressful life events in a school sample of adolescents aged 13-16 years. Depression was measured with the Beck Depression Inventory (Beck & Steer, 1987). Other measures included the Family Environment Scale (FES; Moos & Moos, 1981), the Life Stress Index (Coddington, 1972) and the Childhood Social Network Questionnaire (Chan & Perry, 1981). Sixty-three percent of the sample was not depressed as measured by the BDI. No significant difference was found between mean depression scores for males and females. Friedrich et al (1988) reported two primary gender differences. The first was an absence of a strong relationship between depression and peers' social support satisfaction in boys. There was no gender difference in the average level of social support. The second was the absence of a connection between depression and life stress in girls. Friedrich et al (1988) concluded that the social network of adolescent girls is an important buffer to depression and life stress, and consequently, life stress is much more variable in its relationship to depression in girls. As boys, at this age, are presumed to lag behind in several areas of development, including social development, Friedrich et al (1988) suggested that it is possible that adolescent boys may be affected more by stressful life events than adolescent

girls or may have fewer resources i.e. peers; social support, to buffer impact. As this study is correlational it does not allow the determination of cause and effect between depression and psychosocial variables. Moreover, the depressed sample was too small (37%) to allow precise gender analysis.

Baron & Perron (1986) evaluated potential gender differences in performance on the BDI in an adolescent community sample (aged between 13 and 17 years) as a function of their living conditions and other demographic variables. They found that females (mean=12.34) had higher BDI scores than males (7.83), however, they did not identify any specific variables which played a role in determining such differences in adolescents. Baron et al (1986) suggest two alternative explanations for these findings. Firstly, they suggested the possibility that the variables they examined in their study do not have a direct influence on gender difference in depressive symptoms of adolescents. Their second explanation is that the gender differences observed in adolescents may depend more upon developmental characteristics combined with age-related stress, rather than upon living conditions.

Avison & McAlpine (1992) examined the relation between stressful experiences, psychosocial resources and gender differences in depression among 306 high school students aged 16 through to 19 years. Depressive symptoms were assessed with the CES-D, sociodemographic data was collected and coded. Social support was measured with the Revised Kaplan Scale (Turner, 1983). Twelve life events were used as checklist to measure stressful life events. Mastery was measured by a seven item scale developed by (Pearlin & Schooler, 1978). Self-esteem was measured with a short form (6 item) of the Rosenberg (1979) esteem scale. Finally, adolescents' perception of their relationships with their parents was measured with the Parental Bonding Instrument (Parker, 1983).

Avison et al (1992) reported that females reported significantly higher levels of depressive symptoms than males. Overall, they found a significant relation between stress and depression in adolescents, however, they did not find a gender difference in regard to the effects of stress on depressive symptoms. Thus, there was no evidence that the elevated levels of depressive symptoms in females was due to their greater responsiveness to stressful experiences. Self-esteem was the only psychosocial variable which was associated with the gender difference in depressive symptoms. Mastery and social support were significantly associated with lower levels of

depression however, only among females. Avison et al (1992) accounts for these results by suggesting the possibility that females may be more sensitive than males to variations in social support or to feelings of powerlessness. They also note an alternative hypothesis by suggesting that their results may be due to their choice of mental health outcome. They noted that if they had employed a measure of externalising behaviour such as anger/aggression or substance abuse they may have found significant effects for mastery and social support among males.

In regard to perceived parent-child relationships, those who perceived their fathers as over-protective were more distressed. Perceived over-protectiveness by the father partially accounted for the gender difference in depressive symptoms. Avison et al (1992) suggested that the fathers' over-protectiveness, more so than the mothers', may inhibit the development of a sense of efficacy in females, which in turn may contribute to higher levels of depressive symptoms among adolescents girls. Finally, Avison et al (1992) found that perceptions of mothers as caring parents was also a significantly stronger correlate of depression among females than males. There are a number of limitations to Avison et al's (1992) study. Their sample was not randomly selected. Subjects were taken from one rural and three urban high schools in Ontario. Adolescents in the study were in their early teens so the results may not necessarily generalise to all adolescents. Finally, this study was correlational, thus no causal links can be made. It is also possible that stressful experience, psychosocial resources and perceptions of parent-child relationships are consequences of depression rather than precursor. Only longitudinal studies would delineate this.

More recently, Nolen-Hoeksema (1994) has proposed an interactive model to account for the emergence of gender differences in depression in adolescents. She suggests this phenomenon is due to the interaction of two factors; (a) girls entering early adolescence with a style of responding to frustration and distress that is less efficacious and action-oriented than boys and, (b) girls begin to face certain uncontrollable stressors in early adolescence to a greater extent that boys. Thus girls who enter adolescence with a less action-oriented behavioural style when faced with negative or stressful life events, are vulnerable to developing depression. Nolen-Hoeksema (1990) suggests that female's style of responding to depressive symptomatology is part of the feminine stereotype; being inactive and emotional, in contrast, males more distracting style of responding is part of the masculine stereotype; being active and controlling. These styles of

responding are selectively reinforced by parents and the wider society and are present both before and after puberty. Nolen-Hoeksema accounts for the emergence of gender difference in depression at adolescence by suggesting that in early adolescence girls are experiencing certain challenges more often, or to a greater degree, than males. These changes include physical changes at puberty which are disliked by females themselves as well as being devalued by society. The rate of sexual abuse increases, and is higher for girls, than boys. Although many girls cope with the challenges of early adolescence without developing a vulnerability to depression, for some girls, the challenges of early adolescence may interact with their pre-existing tendencies to be less active in coping with their own symptoms of distress, which leads to depression. Moreover, Nolen-Hoeskema notes that adolescents who have long or frequent periods of depression in adolescence are at risk for depression for at least two reasons. Firstly, depression interferes with performance, so that many of the depressed adolescents opportunities may be undermined by depression. Secondly, as depression appears to influence cognitions, individuals who are frequently depressed may develop more negative self-concepts and make poorer decisions in regard to important areas of life, thereby putting them at increased risk of depression. Nolen-Hoeksema (1994) supports her hypothesis by noting a number of studies with adults which have demonstrated the relation of a ruminative response style to depression in females (e.g. Nolen-Hoeksema & Morrow, 1991; Lyubomirsky & Nolen-Hoeskema, 1993a; Lyubomirsky & Nolen-Hoeksema, 1993b). No studies, however, have directly tested this hypothesis in adolescents.

In a study investigating explanatory style with preadolescent children, Nolen-Hoeksema, Girgus, & Seligman (1991; discussed previously) found that boys, rather than girls, had a more maladaptive explanatory style. Nolen-Hoeksema et al (1991) suggest that girls may develop a more maladaptive explanatory styles than boys during adolescence, and it is this switch in explanatory style which accounts for the switch in the gender ratio of depression. Nolen-Hoeksema, (1994) suggest that perhaps pressures for females to be non-assertive and to conceal their competence may lead, at least for some females, to feel helpless about their ability to bring about the outcomes they desire and thus they develop a maladaptive explanatory style. Overall, Nolen-Hoeskema et al (1991) do not adequately explain the mechanisms underlying the switch in explanatory style. It is not clear if boys lose their maladaptive explanatory style, or girls' coping style simply becomes more maladaptive.

(3) Summary

The research investigating the association between stressful events is mixed. The hypothesis that girls experience more stressful events, thereby leaving them more vulnerable to depression, receives some empirical support. There is evidence, for example, that adolescent girls experience more stressful events than boys (Gore et al, 1992) and that stressful events may have more impact on girls' self-esteem than boys' (Simmons, et al., 1987). In addition, the combination of pubertal changes and social transitions/challenges also produces a vulnerability for developing depression in both girls and boys, however, girls are more likely to experience this combination than boys (Peterson, et al., 1991). There is limited support for the hypothesis that differential coping responses may contribute to the emergence of gender differences in depression in adolescents (Simmons, et al., 1987). Although substantial evidence exists for a ruminative style in depressed adult women, no studies have been conducted to specifically test this hypothesis in adolescents. Finally, not all studies have found an association between gender, stressful events and depression (Friedrich, et al., 1988; Baron & Perron, 1986; Avison & McAlpine, 1992).

Overall, the studies have looked at a limited number of possible stressful events, thus, is may be that different stressful events differentially affect males and females, rather than females being more vulnerable to stressful events per se. In general, the comparison of studies is difficult as stressful events are operationalised and measured differently. Moreover, the measurement of stressful events often occurred when subjects were depressed, thus, their recall of such events may have been excessively high. Although stress has generally been conceptualised as a risk factor for depression, there is some evidence to suggest that stressful events not only act as triggers for the onset of depression but may characterise the long-term experience of adolescents vulnerable to depression. Thus, depressed adolescents may behave in ways that exacerbate the level of stress in their life (Rohde, Lewinsohn, & Seeley, 1994). These factors need to be considered and differentiated in further research in this area.

(4) Models

All of the proposed models which attempt to account for the emergence of gender differences in depression receive some empirical

support. Contrary to model 2, however, consistent with model 1, there is evidence that stressful life events often precede depression in males and females (Lewinsohn, et al., 1988; Brown & Harris, 1978; Paykel, et al., 1969). It is not clear, due to a lack of research, whether males and females experience the same amount and degree of stressful events in preadolescence. Nor is it clear whether males and females in preadolescence are equally vulnerable to the effects of stressful events. One study with children reported that psychosocial stressors were related to depressive symptoms in both preadolescent males and females, however, a greater number and greater relation were associated with depression for girls, rather than boys (Lefkowitz et al, 1985). Another study however, reported finding no gender difference in the association between psychosocial variables and depression (Edelsohn, Ialongo, Werthamer-Larsson, Crockett, & Kellam, 1992). As both Model 1 and 2 would predict, the frequency of stressful events appears to increase for females, relative to males, at adolescence. There is also limited empirical support for Model 3, which would posit that, prior to adolescence, girls, more than boys, have characteristics associated with depression, possibly including experiencing more stressful events. Consequently, when faced with the challenges and/or stressful events of early adolescence, females are more likely to develop depression than boys. Peterson et al's (1991) longitudinal study provides some evidence for model 3. Peterson and colleagues reported that there was no gender difference in early adolescence but that a gender difference had emerged by 8th grade (13 years). These gender differences appeared to be directly related to the changes experienced in early adolescence, which were more likely to occur simultaneously in adolescent girls. These changes included early pubertal timing and synchronous school and pubertal change. Thus, in accord with model 3, it is possible that preadolescent girls enter early adolescence already at a disadvantage in regard to self-esteem and self-efficacy. As a consequence, they are already more vulnerable to depression than boys. When, subsequently faced with the multiple, and often simultaneous, stressful events of adolescence, girls are then more likely to develop depressive symptoms, and perhaps a depressive disorder, than boys. Overall, the research in this area is too sparse to make firm conclusions. The current studies need to be replicated and extended. Moreover, longitudinal studies are needed which begin in childhood, long before the emergence of gender differences, and follow girls and boys through, and beyond, the adolescent years.

4.3 SELF-EVALUATION

(1) Introduction

Self-evaluation refers to an individuals evaluative representations and beliefs about oneself as a person in terms of characteristic behaviours, feelings and thoughts (Alsaker & Olweus, 1993). Self-evaluations are thought to serve a similar function as "working models" (Bowlby, 1973; Bowlby, 1969) which are constantly checked and rechecked for internal consistency with other models and with the world (Alsaker & Olweus, 1993). There is substantial evidence to suggest that heightened self-consciousness is associated with self-criticism, negative self-evaluation, negative affect and behavioural withdrawal (Carver, Blaney, & Scheier, 1979; Duval & Wicklund, 1972; Fenigstein, 1979 cited in Allgood-Merten, et al., 1990). This has led some writers to suggest that it is adolescent females' increased self-consciousness and tendency to evaluate themselves negatively which places them at greater risk of depression (Ruble, Greulich, Pomerantz, & Gochberg, 1993; Schonert-Reichl, 1994; Alsaker & Olweus, 1993). It is argued that this is largely the result of socialisation and gender stereotyping. Ruble et al (1993), for example, have suggested that two main factors of early gender development contribute to girls vulnerability to depression. The first factor is the actions, attitudes and beliefs of socialisation agents, such as gender differences in the expectations and norms of parents and teachers. The second factor is the construction of gender identity which incorporates gender stereotypes of masculinity and femininity. Both of these factors are thought to contribute to a greater likelihood that girls, rather than boys, will exhibit higher self-evaluative concerns which may act as precursors to, or risk factors, for depression. The research investigating the relation between self-evaluation, gender and depression is based on community samples of adolescents with depressive symptoms, rather than depressive disorders. Assessment of self-esteem has typically been with self-report inventories.

(2) Research

In their study investigating the association between parental attachment, view of self and depressive symptomatology, Kenny, Moilanen, Lomax, & Brabeck (1993) found that girls reported more depressive symptoms and lower self-worth than boys. Participants in this study were 207 eighth grade children (13 years). The children were assessed in the autumn of 1990 and again in the autumn of 1991. View of self was measured by the Self-Perception Profile for Adolescents (SPPA; Harter, 1988)

and depressive symptomatology was measured with the CDI. It is possible that depressed mood may have contributed to the negative cognitive appraisals of the self, although it is not clear why this would be the case for girls and not boys. Kenny et al (1993) do not discuss possible gender differences in the levels of depressive symptomatology, however, there may be a relation between more severe levels of depression and self-evaluation, with more females in this sample being severely depressed. Without such an analysis this hypothesis remains untested.

Schonert-Reichl (1994) investigated gender difference in the relationship between depressive symptoms and adolescent egocentrism. Schonert-Reichl et al (1994) employed Elkind's (1967) construct of adolescent egocentrism which refers to the self-centredness frequently noted in individuals as they make the transition from childhood to adulthood. According to Elkind (1967) adolescent egocentrism is manifested in two ways, through the imaginary audience and the personal fable. The imaginary audience construct refers to the adolescent's belief that everyone is concerned about his or her behaviour. The personal fable emerges as a result of the imaginary audience, which is the belief that if everyone is concerned with the adolescent then the adolescent must be very important and special. Elkind (1967) has proposed that adolescent egocentrism may contribute to the etiology of depression during adolescence. Subjects in Schonert-Reichl's (1994) study were 62 students, whose age ranged from 12-17 years. Depression was assessed with the Reynolds Adolescent Depression Scale (RADS), the Eklind Imaginary Audience Scale (IAS) was used to assess adolescent's imaginary audience and the personal fable was measured with the Lapsley New Personal Fable Scale (NPFS). Schonert-Reichl et al (1994) found that adolescent females regarded themselves higher in uniqueness and self-consciousness than adolescent males and gender differences emerged between both of the dimensions of adolescent egocentrism and depressive symptomatology. More specifically, adolescent females scored higher than males on the IAS and the NPFS. Interestingly the IAS was positively related to depressive symptomatology for females, but not for males. The NPFS was negatively related to depressive symptomatology for both adolescent males and females. Schonert-Reichl et al (1994) note that their findings are consistent with other results suggesting a positive relationship between self-consciousness and depression, particularly for females. Longitudinal data have not been collected to support the developmental emergence and course of egocentrism in adolescents. In addition, there is some debate on whether it emerges because of formal

operational thought or because of perspective taking and interpersonal understanding (Santrock & Yussen, 1988). This study is limited by the small sample size and relies heavily on self-report of both depression and egocentrism.

Alsaker & Olweus (1993) conducted a cohort longitudinal study designed to ascertain whether there was a systematic relationship between age and global self-evaluation, and whether there were gender differences in self-esteem in early adolescence or in particular phases of this developmental period. Four consecutive cohorts were followed over a period of 2.5 years. The total sample for this study was 2600 school children whose age ranged from 11 through to 16 years. Alsaker (1993) assessed self-evaluation with the Global Negative Self-Evaluations Scale and Perceived Instability of Self Scale. Overall, Alsaker (1993) did not find any grade or age related changes, thereby proving no evidence for the notion that adolescence is a stressful period. In regard to gender differences, they found differences in favour of boys both on the GSE and the PIS. The gender difference on the PIS increased with age. Examination of the gender distributions for the GSE and the PIS indicated that there was a higher percentage of boys at the positive end of the scale and a higher percentage of girls at the negative end. Thus, there was an over-representation of girls with both a negative and highly fluctuating self-concept. This led Alsaker et al (1993) to conclude that negative self evaluation, which forms part of the depressive syndrome, accounts for the emergence of the gender difference in depression in adolescence. Alsaker et al (1993) noted that their findings fit with previous research indicating more internalising problems in females than in males after puberty (Rutter, Izard, & Read, 1986) and, generally, in adult populations (e.g. Cytryn et al 1986; Nolen-Hoeksema, 1987). Interpretation of the results of this study are limited as Alsaker et al (1993) measured only two dimensions of self-concept. Self-concept is thought to be a complex construct, thus, it is possible that, had other dimensions of self-concept been tapped, differing results would have been found.

A number of studies previously discussed have reported gender differences in self-evaluation. Allgood-Merten et al (1990), for example, investigated a number of psychosocial factors, including self-evaluation, hypothesised to be associated with depressive symptomatology and with the preponderance of depressed females in a school sample of adolescents (13-18 years). Allgood-Merten et al (1990) reported more depressive symptoms, self-consciousness, stressful recent events, feminine attributes and negative

body image/self-esteem in girls, than boys. Simmons, et al (1987) has also reported a gender difference in the relation between self-esteem and negative life events with girls only suffering losses in self-esteem when the number of life changes they experienced increased. Simmons et al (1987) also concluded that in terms of self-esteem girls appear more vulnerable to life transition stressors than boys. Similarly, Blyth, et al (1983) have reported that girls are at a particular disadvantage in regard to self-esteem who have make the transition from elementary school into junior high school in grade 7 (12 years) compared to students who remain in an elementary school setting until grade 9 (14 years). The long-term impact of self-esteem disturbance, particularly during the transition from prepuberty to puberty, needs to be examined.

There is some debate as to when gender differences in self-evaluation emerge. In their review of gender-differentiated behaviour Hill & Lynch (1983) reported that gender differences in self-consciousness emerge in early adolescence, with girls reporting much higher levels of self-consciousness than boys. Hills et al (1983) also reported that adolescent girls were more likely than boys to cope with anxiety-provoking situations by being compliant or by avoiding negative reactions. This was particularly the case in older adolescent girls (15 years). In addition, during early adolescence girls experience less stability of self-image and a decrease in self-esteem. Girls also tend to become more oriented toward interpersonal goals. In their review of the clinical and nonclinical literature on gender differences in self-evaluation, Ruble, et al., (1993) have also suggested that girls may be more susceptible to self-evaluative concerns, particularly as reflected in lower expectations for future success, more maladaptive causal attributions for success or failure outcomes and negative behavioural and evaluative reactions to failure. In contrast to Hill et al (1983), however, Ruble et al (1993), found that girls susceptibility to self-evaluative concerns were evident in preadolescent years, rather than emerging in adolescence as most studies suggest. Cole et al, (1990) discussed previously, for example, reported that depressed preadolescent girls appear to have a tendency to underestimate their personal competence. Ruble et al, (1993) have proposed that although there was no gender difference in the rate of depression prior to adolescence there is evidence that girls and boys may endorse different symptoms and that this may be an indication that girls are more vulnerable to self-evaluative forms of depressive symptoms prior to the early adolescent years. Ruble et al (1993) further note that girls greater vulnerability to depression does not imply that girls and women have more

adjustment problems. They point out that boys and men show higher incidence of other types of disorders, such as conduct disorder, aggression, crime and alcoholism (Nolen-Hoeksema, 1987). Thus, Ruble et al (1993) argue that it is females' greater vulnerability to adjustment problems of a particular type (those involving self-evaluation) which is intimately linked to depression.

(3) Summary

A consistent finding in the studies reviewed here is that adolescent girls tend to be more self-conscious and have a more negative self-concept than adolescent boys. Moreover, there appears to be a significant relation between self-consciousness, negative self-evaluation and depression, particularly for females. Although not conclusive, there is some research to suggest that gender differences in self-consciousness and self-evaluation may be evident in preadolescence. Both heightened self-consciousness and negative self-evaluation have been linked to depression. A sense of low self-efficacy and negative self-evaluation have been theorised by many to lead to feelings of low control, pessimism, hopelessness and depression (Bandura, 1977; Abramson, Seligman, & Teasdale, 1978).

The question remains as to why gender differences in self-evaluation and self-consciousness emerge. A number or researchers have argued that such gender differences occur as a result of differential socialisation practices for girls and boys. Ruble et al (1993), for example, have argued that gender stereotypes and socialisation processes lead males and females to feel differently about themselves and to attach different importance to meeting self-evaluative standards. Ruble, et al (1993) has argued that these socialisation practices impact on the child's construction of gender identity resulting in girls exhibiting higher levels of self-evaluative concerns which increases their vulnerability to depression. Similarly, Gore et al (1993) have suggested that socialisation practices engender greater social relational concerns for girls, than boys. That is, girls are socialised to be more concerned with pleasing others and with evaluating their own performance, than boys. It is hypothesised that this focus on the opinions and evaluations of others means that failure to meet externally imposed standards of conduct or performance may affect girls more than boys. In addition, as the pressure is greater and the standards stronger for girls than boys, failure is more likely. Thus, girls are more at risk for depression than boys. Research, previously reviewed in this paper, suggests that preadolescent girls are more

likely than boys to approach tasks for extrinsic reasons, such as grades or to gain approval, than intrinsic reasons (Boggiano & Barrett, 1992). Future research need to focus on further defining the mechanisms which link gender, self-evaluation and depression.

Finding an association between gender differences in self-evaluation and depression, however, does not imply a causal link. Thus, the question still remains as to whether this difference predisposes girls to depression. Longitudinal research is needed to determine if gender differences in evaluative processes may be involved in the later divergence of the genders in depression. Ruble et al (1993) finding of early gender differences in self-evaluative processes also raises questions as to when the vulnerability to depression develops. Although most studies focus on adolescents, their review suggests that gender differences may occur earlier.

(4) Models

Gender differences in self-evaluation appear to be present in preadolescent children, however, the gender differences in depression does not emerge until adolescence. Thus, the emergence of gender differences in depression cannot be accounted for by gender differences in self-evaluation, as model 1 and 2 would predict. Moreover, negative self-evaluation has been found to be correlated with depressive symptoms in both males and females, contrary to what model 2 would posit. Overall, model 3 provides the best account of the data. In preadolescence, girls are more likely than boys to develop heightened self-consciousness and more negative self-evaluations, and thus, are more vulnerable to depression. It is only when this vulnerability, more probably in combination with other risk factors, interacts with the challenges of adolescence that the gender difference in depression emerges. Currently, further research is needed to focus on the identification of other factors which may interact with self-evaluation to produce the gender ratio in depression.

4.4 PERSONALITY

(1) Introduction

A number of writers have suggested that gender differences in personality characteristics account for the emergence of gender differences in adolescence. Males are thought to be higher on instrumental traits, that is, more task-oriented, analytical, assertive, emotionally stable and competitive

than females. Females are thought to be higher on expressive traits, that is, more people-oriented, gentle, nurturant, emotional, nonassertive and self-sacrificing than males (Broverman, Broverman, Clarkson, & Rosenkrantz, 1972). In his meta-analysis of gender differences in personality Feingold (1994) reported that males were found to be more assertive and had slightly higher self-esteem than females. Females were higher than males in extraversion, anxiety, trust and nurturance. The personality dimensions which most strongly differentiated between the sexes were assertiveness and tender-mindedness. These gender differences were found to have remained relatively constant across generations from late 1950s to the early 1990s. The expressive personality traits which typify females are thought to make girls more vulnerable than boys for developing depression.

At least three models; biological, sociocultural, biocultural, have been proposed to account for how gender differences in personality traits develop (Feingold, 1994). The biological model proposes that gender differences in personality are innate temperamental differences between the sexes which have a strong biological basis. It has been suggested for example, that sex differences in chromosomes may make females more prone to depression than males. As discussed previously, there is little evidence for this theory. In contrast, the sociocultural model suggests that social and cultural influences produce gender differences in personality. For example, differential socialisation of the sexes results in different perceptions of the self and world views. For females this is thought to result in an increased vulnerability to depression. Feingold (1994) points out that the social cultural model is a theory of proximal, rather than distal, causes of gender differences. Feingold (1994) further notes that even if a pure sociocultural model is also valid, biological or evolutionary-related factors may have shaped the sociocultural factors. Thus, according to a bio-cultural model of gender differences in personality, biology may be the distal cause of gender differences and social or cultural influences may be the proximal cause.

(2) Research

A few studies have examined the relation between various personality dimensions, gender and depression. Gjerde, Block, & Block (1988) for example, investigated both observed and self-attributed personality characteristics associated with depressive symptoms in a non-clinical sample of adolescents. Depressive symptoms were measured with The Center for Epidemiological Studies -Depression scale (CES-D). Personality characteristics were measured with the California Adult Q-sort (CAQ; Block,

1978)), The Adjective Q-sort (AQ; Block & Block, 1980) and the Multidimensional Personality Questionnaire (MPQ; Tellergen, 1982). Gjerde et al (1988) reported that depressed males were observed to exhibit an externalising pattern of characteristics. They were relatively antagonistic, unrestrained, manifestly discontented with self, and unconventional in thought and behaviour. In contrast, depressed females exhibited an internalising pattern of characteristics. They were seen as ego-brittle, unconventional and ruminating. Both males and females described themselves as aggressive and alienated from social surroundings. Interestingly, females were not observed to exhibit aggressive behaviour nor to have poor social interpersonal relations. Depressive tendencies in females were associated with low self-esteem, however, this was not the case for males. Gjerde et al (1988) suggested that their findings may be interpreted as the result of socialisation practices where boys are encouraged to rely upon assertive and aggressive behaviours to obtain life goals whereas girls are taught to be diffident, self-evaluating and self-effacing. They also argue that the absence of overt expressions of aggression in depressed females may be interpreted as devolving from the early social sanctions imposed on girls who are overt in their expression of aggressive affect. Gjerde et al (1988) note that their study also provides some support for Nolen-Hoeksema's (1994) hypothesis suggesting that the emergence of gender differences in adolescence is due, in part, to different explanatory styles. More specifically, Nolen-Hoeksema (1994) proposes that females are less action-oriented and have a more ruminating style of coping with symptoms of depression than males. An alternative, yet just as plausible explanation of these results, is that females experience higher levels of helplessness in controlling their environment. A prolonged sense of helplessness has been hypothesised to lead to depression (Abramson, et al., 1978). Gjerde et al (1988) study was based on depressive symptoms in a nonclinical sample, thus, inferences cannot be made about clinical depression.

Gjerde & Block (1991) conducted a longitudinal study to investigate the antecedents of depressive symptomatology. Gjerde et al (1991) reported on the relation between observed play constructions of children at age 11 years and self-reported depressive tendencies (CES-D) seven years later, at age 18 years. They reported that preadolescent girls manifesting depressive tendencies seven years later, tended to manifest in their play, an explicit concern with moral issues and loss. Relative to girls scoring in the intermediate range of the CES-D, girls scoring low or high at age 18 years,

play behaviours at age 11 years were seen as more controlling impulse, more angry and more concerned with loss. In contrast, in preadolescent boys receiving low or high intermediate CES-D scores were seen as more undercontrolling of impulse, more angry and more concerned with loss than boys who scored in the intermediate range. Gjerde et al (1991) concluded that male adolescents with depressive tendencies were characterised by an externalising pattern of personality characteristics. In contrast, female adolescents with depressive tendencies were characterised by an internalising pattern of personality characteristics. The results of this study are limited in that depressive symptomatology was measured with one self-report inventory; the CES-D.

Baron & Peixoto (1991) examined the relation between personality factors of sociotropy and autonomy and depressive symptomatology. They used the Beck Depression Inventory (BDI) to assess depression and the Sociotropy-Autonomy Scale (Beck, 1983) to assess personality. Sociotropy and autonomy are two personality dimensions or modes described by Beck (1987; 1983) which can dominate ones psychological functioning. Sociotropy or social dependency refers to an individuals need for positive social interchange. Autonomy refers to an individuals need to preserve and increase his or her dependence or individuality, mobility, privacy, freedom of choice, action and attaining meaningful goals. Each of the personality dimensions refers to a cluster of goals that can be considered as a means to obtaining a sense of well-being or positive self-esteem. Baron et al (1991) reported that subjects with high sociotropy showed significantly more depressive symptoms than subjects with low sociotropy. Females had higher sociotropy scores than males. High autonomous females scored higher on the BDI than high autonomous males. Baron et al (1991) accounted for these results by suggesting that while most males are being socialised for career establishment, females are in the more complex position of being socialised for both career and family establishment. The perceived need to integrate both these roles may result in more conflict and confusion for female adolescents than for male adolescents. Thus resulting in more depression in females.

Goodyer, Ashby, Altham, Vize, & Cooper (1993) assessed the association between temperament and major depression in adolescents. The subjects in this study were 193, 11 to 16 year old adolescents in the community. They were initially screened for mood disturbance with the Mood and Feelings Questionnaire (MFQ) and later assessed for major

depression with the Diagnostic Interview Schedule for Children (DISC). Temperament was measured with the Emotionality, Activity, & Sociability Scale (EAS) which has four subscales of; activity, emotionality, sociability, and shyness. Only 16 girls and 3 boys met DSM-III-R criteria for an episode of major depression in the preceding 12 months. Goodyer et al (1993) reported that gender differences in the structure of temperament were noted from both parent and teacher reports. High negative emotionality (i.e. easily upset and tearful, implying undesirable or negative styles of emotion) alone was associated with major depression, particularly in girls. Goodyer et al (1993) suggested that perhaps the behavioural style of extreme negative emotionality is a component of a risk process that determined the difference in prevalence rates between the sexes for major depression during adolescence. Goodyer et al also noted however, that an alternative explanation could be that their findings may reflect a response bias by adults; for example adults may be more likely to associate tearfulness and distress with girls than boys. This study is limited because of the small number of depressed cases, particularly as there were only three depressed boys. Moreover, with no non-depressed psychiatric comparison group it can not be ascertained as to whether high levels of emotionality are specific to depression or exert a more non-specific vulnerability for any type of psychopathology occurring.

(3) Summary

In general, the studies referred to here suggest that particular dimensions of personality are associated with a vulnerability to depression, and these dimensions tend to be more common in females than males. Depressed females tend to exhibit ego-brittle, unconventional and ruminating behaviours, whereas, depressed males tend to exhibit antagonistic and unrestrained behaviours (Gjerde, et al., 1988). Depressed females tend to be more dependent (Baron et al, 1991) and have higher negative emotionality than males (Goodyer, et al., 1993). Finding an association between depression, gender, and measures of personality does not necessarily infer that gender differences in personality traits predispose girls to depression. They may be a consequence, rather than a precursor of depression. This notion is supported by ample research which indicates that depressed males and females tend to express depressive symptoms in gender appropriate ways.

Furthermore, it is equivocal that personality dimensions thought to be associated with depression are significantly more common in females. Feingold (1994) reported finding that only two personality dimensions strongly differentiated between the genders; assertiveness and tender-mindedness. In their review of gender differences in personality, Nolen-Hoeksema et al (1991) reported that gender differences have been found in some measures of assertiveness, such as instrumental traits, active versus ruminative coping, verbal and physical aggression and dominancy in social interactions. Nolen-Hoeksema et al (1991) also found some evidence that females, more than males, tend to rely on external feedback for making self-evaluations, however, there was no evidence that females were more dependent than males. Currently, it is not known how much personality differences contribute to emergence of gender difference in depression at adolescence. As research indicates that gender differences in personality are apparent in preadolescents (Nolen-Hoeskema et al, 1991), they alone cannot account for the emergence of gender differences in depression at adolescence.

(4) Models

There is some evidence that gender differences in personality are evident in preadolescents. Few studies, however, have investigated the relation between gender differences, temperament and personality in young children. The results of studies which do exist are mixed. Boggiano & Barrett (1992) for example, reported that preadolescent girls, not boys, have an extrinsic motivational orientation which is thought to be associated with depression. In contrast, Nolen-Hoeksema, et al (1991) has reported that 8 year old boys are more likely to exhibit a maladaptive coping style, compared to girls, which is thought to be associated with depression. Overall, however, although the direction of results is difficult to ascertain, gender differences in personality do appear to exist in preadolescent children. The relation of these personality dimensions to depression has yet to been examined. The fact that these gender differences are present before adolescence suggests that they alone, cannot account for emergence of gender differences in depression. Although limited, the research provides some support for Model 1 and contradicts model 2. Model 1 posits that the personality factors associated with depressive symptoms are the same for preadolescent males and females. In contrast, model 2 suggests that the factors leading to depression are different in males and females. The research indicates that, although more common in females, personality

dimensions such as pessimistic attributions, ruminative coping style and low levels of instrumental traits have been correlated with depressive symptoms for both genders (Nolen-Hoeksema, et al., 1991; Nolen-Hoeksema, Morrow, & Fredrickson, 1993; Allgood-Merten, et al., 1990), thereby contradicting model 2. There is no evidence that gender differences in personality dimensions associated with depression increase in adolescent females, relative to males as would be predicted by model 1 and 2. In regard to Model 3, it is possible that gender differences in personality traits, ruminative coping and low assertiveness, are risk factors for depression, which are evident in preadolescence. Only when these risk factors interact with the challenges of early adolescence do girls manifest more depressive symptoms than boys. This latter model, however, remains to be tested.

4.5 SEX ROLE ATTRIBUTES

(1) Introduction

Sex role stereotypes have also been proposed to underlie the gender difference in depression. Wilson & Carins (1988) note that there are several contrasting theories proposing links between sex-role constructs and mental health. The 'traditional hypothesis' suggests that individuals who are appropriately sex typed (i.e. masculine males and feminine females) are psychologically healthier because their behaviour, beliefs and attitudes are consistent with cultural stereotypes and expectations. Femininity is thought to be characterised by attributes such as empathy, nurturance and warmth, while the construct of masculinity is thought to include attributes such as, determination to succeed, competitiveness and self-aggrandisement (Pleck, 1975).

An alternative 'gender intensification hypothesis' posits that it is the feminine sex role which results in females being more vulnerable to depression. According to these theorists many of the stereotypically female characteristics, such as helplessness, passivity and emotionality are characteristics often associated with depression (McGrath, Keita, Strickland, & Russo, 1990). Hill & Lynch (1983) have argued that the pubertal changes in early adolescence serves to stimulate increased focus, by both boys and girls, on the significance of their gender. These researchers suggest that as the meaning of gender may be somewhat ambiguous to developing children, they may identify with either the stereotype of male or female. As

they move into puberty, however, boys will identify more strongly with the masculine stereotype and girls will identify more strongly with the feminine stereotype. The feminine sex role is thought to heighten the tendency to respond to stress or negative life events with depressive symptoms (Hill & Lynch, 1983). Gove & Herb (1974) has argued that it is the role conflict that girls experience as they enter adolescence, which accounts for the gender difference in depression. According to Gove & Herb (1974), girls are expected to base their self-esteem on their relationships with boys, and to narrow their aspirations and activities to those concordant with the role of wife and mother. As girls enter adolescence they may experience conflict because they can no longer value their own achievements and abilities, or pursue their own interests, but must rely on others for their self-esteem. In contrast to girls, boys continue to experience the same pressure and expectations in adolescence as they did in childhood. In line with the postulates of the traditional hypothesis it is suggested that girls who reject the pressure to conform to the feminine sex role stereotype face rejection by their peers.

In contrast, the 'masculinity hypothesis' posits that individuals with dominant masculine attributes, i.e. males, will be more resistant to depression. Peterson et al (1991) has suggested that depression may be the lack of masculine characteristics, rather then the presence of feminine characteristics. Another, more recent hypothesis posits that it is androgynous (combines both feminine and masculine attributes) individuals who are less vulnerable to depression, as they have relatively high levels of both instrumental and expressive traits which result in more flexible coping processes than typical sex role traits (Spence & Helmreich, 1978).

(2) Research

Although there has been substantial theorising in regard to the part sex role identity has to play in the emergence of gender differences in depression only two studies were found which specifically examined the relation between gender, sex role and depression. Both of these studies were conducted with community samples of adolescents. One study assessed depressive symptoms in adolescents (Wilson & Carins, 1988), while the other measured depressed affect (Peterson, et al., 1991).

Wilson & Carins (1988) conducted three studies with community samples of adolescents (10-16 years), to investigate the relationship of sex-role traits to age trends and gender differences in depressive symptoms. They used the General Health Questionnaire (GHQ; Goldberg, 1972) to screen depression and sex role attributes were assessed with the Personal Attributes Questionnaire (PAQ; Spence & Helmreich, 1978). Wilson et al (1988) also measured perceived competence with the Perceived Competence Scale for Children (Harter, 1982). These researchers reported that females had a significantly higher rate of depressive symptoms than males. Their results, however, contradicted the view that appropriately sex-typed individuals are healthiest. The relatively more 'masculine' groups of females reported significantly fewer depressive symptoms that the more 'feminine' groups. The androgynous group had similar levels of depression compared to the masculine group. There was no significant correlation between femininity and depression in any of the studies, thereby providing evidence against the femininity hypothesis. Wilson et al (1988) found no significant change in masculinity with age, and age trends in depression were not affected when the variation due to masculinity was controlled. Thus, it would seem that high masculinity, whether alone, or, in combination, with feminine attributes is a protective factor for developing depression. Wilson et al (1988) found that there was not a significant change with masculinity and age, thus, there was no evidence to suggest that differences between the sexes in changing androgen levels result in the emergence of gender differences in depression. Wilson et al (1988) concluded that the gender difference in instrumental attributes, which develops before adolescence, results in perceived low levels of competence and negative self-worth, which in girls results in depression (Wilson et al 1988). Thus, females who have lower levels of instrumental orientation than boys, are more vulnerable to depression. This research is a cross-sectional study, thus, the notion that a decline in instrumental orientation and perceived competence may follow, rather than precede depression, cannot be ruled out. Longitudinal research would test these hypothesis.

Peterson, et al (1991; previously discussed) conducted a cohort-sequential longitudinal study to examine the developmental pattern of depressed affect over early- and mid-adolescence in school samples. Adolescence were assessed in the 6th (11 years) through to 8th grade (13 years) and then followed up again in the 12th grade (17 years). Depressed affect was assessed with three measures; The Emotional Tone Scale from the Self-Image Questionnaire for Young Adolescents (SIQA; Peterson, et al.,

1984), The Kandel Depression Scale (Kandel & Davies, 1982) and The Teenager or Young Adult Schedule (Gittelman, et al., 1985). Amongst other variables, Peterson et al (1991) examined the mediating effects of sex role identity. This was measured with The Bem Sex Role Inventory (Bem, 1974). Peterson, et al (1991) reported that there was no gender difference in early adolescence but that a gender difference had emerged by 12th (17 years) grade. At this time, girls reported more depressed affect and poorer emotional tone than boys. Peterson et al (1991) noted that the differences appeared to emerge at 8th grade (13 years) and to increase over subsequent years. In regard to sex role identity, Peterson et al (1991) reported that neither femininity nor masculinity were significantly related to depressive symptoms in adolescents.

Studies investigating gender differences in the behaviour, thought to tap the personality of children and adolescents, suggest there are marked differences. Before and after puberty girls tend to be less aggressive than boys, are more modest than boys in their statements about their abilities, are more likely to prefer interacting with adults and conform to adult demands and are more concerned with same-sex popularity than boys (Maccoby & jacklin, 1980; Huston, 1983; Simmons & Blyth, 1987 respectively, cited in Nolen-Hoeksema, 1990)). There is also evidence that girls perceive their own competence as a liability in their relationships with peers, especially with boys (Coleman, 1961). In an investigation of psychological dimensions of sex role in children 12 through to 17 years, Rosen (1976) reported that girls were more likely than boys to say that they would be liked less by the opposite sex if they were assertive, pursued their own interests, or beat a boy in a competition. Girls were also more likely to conceal their own competence and exhibit dependent or compliant behaviour. Nolen-Hoeksema (1990) notes that there is evidence that girls may be correct in expecting to be rejected if they reject their sex role. It is possible that for girls the social consequences of exhibiting their competence has negative consequences which lead to depressive symptomatology.

(3) Summary

Too little research has been conducted to draw conclusions or allow an evaluation of each theory, let alone consider comparisons between the theories. Wilson & Carins (1988) found high masculinity, whether alone, or in combination with feminine attributes was a protective factor for developing depression. This provides some support for the hypothesis that depression may be due to the lack of masculine characteristics, rather then

the presence of feminine characteristics (Peterson et al, 1991). In contrast, to Wilson et al, (1988), Peterson et al (1991) found no relationship between either femininity or masculinity and depressive symptoms in adolescents. There is substantial evidence that gender differences in sex role attributes are evident in preadolescent children. It is possible, as Wilson et al (1988) have hypothesised, that such gender differences result in perceived low levels of competence and negative self-worth in girls, thereby resulting in a vulnerability to depression.

(4) Models

There is substantial evidence to indicate that parents' attitudes and expectations toward their children are sex-role stereotyped (Block 1979a), however, there is little evidence that girls (or boys) actually conform more to sex-role stereotypes during adolescence, as model 1 and 2 would predict (Nolen-Hoeksema, 1990; Peterson & Kennedy, 1988). Moreover, there is evidence that low levels of instrumental traits are associated with depressive symptoms in both sexes (Nolen-Hoeksema, et al., 1991), thereby contradicting model 2. Gender differences in sex-role attributes may be implicated in adolescent girls' vulnerability to depression, but the fact that these differences are present before adolescence, when boys tend to be more depressed than girls, indicates that such differences alone cannot account for adolescent girls greater vulnerability to depression. Gender role socialisation begins long before adolescence, and therefore, may exert its influences much earlier. Model 3 accounts for the data more adequately than either model 1 or 2. The research suggests that even in preadolescence, males are culturally reinforced for learning active, instrumental behaviour, whereas females are not. As a consequence, females are more likely to develop less active coping styles than males, and to perceive themselves as less resourceful and self-efficacious. This results in females being more at risk for depression. As females enter adolescence this risk factor, probably in combination with other risk factors, interacts with the stressors of early adolescence and results in depression. As discussed in previous sections, there is substantial evidence to indicate that females, even in preadolescence, have a more negative self-concept, are more self-conscious and make more negative evaluations of their competence, than males. These factors, in combination with impact of gender stereotypes, may also contribute to adolescent girls tendency toward a ruminative coping style, which further increases their vulnerability to depression. This hypothesis remains to be tested, however, there is some research to suggest that

adolescents low on instrumental traits and high on ruminative coping style experience more negative effect in response to pubertal change, than those high on instrumental traits and low on ruminative coping style (Peterson, et al., 1991). Unfortunately, no studies have been conducted which delineate when females more ruminative coping style emerges.

4.6 SOCIAL SUPPORT

(1) Introduction

Social support is thought to be an important factor in promoting an individuals psychosocial adjustment, including the development of autonomy, independence, and intimacy. A number of theorists have suggested that there may be significant differences in the way males and females experience and understand the relationship between the self and other people across the life span, and thus, in the meaning and importance of autonomy, independence and intimacy (Gilligan, 1982a; Gilligan, 1982b; Lyons, 1983). Slavin & Rainer (1990) note that a number of studies have indicated that females exhibit a greater social connectedness than males. Studies investigating social support among adolescents, for example, have consistently reported gender differences in that adolescent girls report higher levels of social support from nonfamily sources, such as peers and adults, than do boys. This gender difference emerges whether support is measured by helpfulness ratings, qualitative rating of satisfaction and willingness to discuss problems, or by the number of significant others listed on an open-ended questionnaire (Cauce, Felner, & Primavera, 1982; Burke & Weir, 1978; Blyth, Hill, & Thiel, 1982 cited in Slavin & Rainer, 1990). There does not appear to be gender differences in the overall level of social support reported from immediate family members (Slavin et al, 1990).

It has been hypothesised that the gender differences in depression at adolescence may have its origin in the quantity or quality of social support. It has been proposed that both peer and familial social support acts as a buffer or protective factor against psychological distress such as depression. This is particularly thought to be the case for females (Friedrich et al 1988). Thus, poor social support may differentially affect males and females, leaving females more vulnerable to depression. Some researchers (e.g. Slavin et al, 1990), however, have questioned whether females' greater social connectedness provides an advantage, or buffer in regard to

psychological well-being. As discussed previously, there is evidence to suggest that females' greater social connectedness results in their being more self-conscious and more oriented to being concerned about the opinion and evaluation of others. Heightened self-consciousness has been associated with self-criticism, negative self-evaluation, negative affect and behavioural withdrawal (Carver, et al., 1979; Duval & Wicklund, 1972; Fenigstein, 1979 cited in Allgood-Merten, et al., 1990). This has led some writers to suggest that it is adolescent females' increased self-consciousness and tendency to evaluate themselves negatively which places them at greater risk for depression (Ruble, et al., 1993; Schonert-Reichl, 1994; Alsaker & Olweus, 1993).

(2) Research

Few studies have specifically investigated gender differences in the relation between social support and depression in adolescents. Those studies that do exist, are based on community samples and depressive symptoms, thus limiting the extent to which findings can be generalised. Slavin & Rainer (1990) for example, conducted a prospective study to investigate the components of perceived emotional support and depressive symptoms in adolescents (14-18 years), which may predict depressive symptoms. Three hundred and thirty-three subjects were given a questionnaire at two time points, eight months a part. Perceived social support was measured by the Perceived Emotional/Personal Support Scale (PEPSS). Depression was assessed with the Children's Depression Inventory (CDI). Slavin et al (1990) reported a significant gender difference, both in the quality of perceived support reported by the adolescents, and in the importance of support variables as predictors of depressive symptoms. Slavin et al (1990) reported that there were no gender differences in the magnitude of perceived support from family members, however, girls reported higher emotional support than boys from both nonfamily adults and peers. Girls' symptoms of depression were responsive to the emotional quality of their relationship with people outside their family, whereas boys' symptoms seemed to be more independent of the quality of these relationships. More specifically, high levels of support from outside the family predicted low levels of symptoms across time for girls. Slavin et al (1990) suggested that these results are consistent with theory suggesting that greater social connectedness and emotional involvement with others characterises the development of females (e.g. Gilligan, 1982a). Changes across the 8-month period suggest that, for girls, the direction of effects between support from family members and symptoms may be the opposite of the direction of

effects between support from friends and symptoms. This suggests the possibility that the impact of girls' depressed mood on the quality of their relationships may be greatest within the family. Slavin et al (1990) suggest that high levels of friend support may lead to better adjustment, whereas, better adjustment may lead to higher levels of family support. As this study is correlational such causal links can only be tentatively inferred. As Slavin et al (1990) note, it is more probable that the effects of perceived support on psychological outcomes is "reciprocal and cyclical". This study is limited by a number of factors. Only one measure of perceived social support and one measure of depression are utilised, moreover, both of these were self-report. An alternative explanation for the results of this study is that it is possible that the construct of social support measured here (emotional support) is not as relevant to boys, as it is to girls. Finally, as Slavin et al (1990) note, as they did not include a measure of stressful life events in their study, they could not determine whether social support provides a psychological buffer.

Larson, Raffaelli, Richards, & Ham (1990; discussed previously) assessed the daily psychological states and time-use patterns associated with depression in a sample (n=483) which included both preadolescents and adolescents (10-14 years). They found that although boys and girls reported experiencing the same amount of subjective social isolation, depressed boys, but not girls, spent much less time with friends, particularly of the same sex. These researchers further reported that this lower rate of peer interaction was not voluntary. Larson et al (1990) concluded that, objective social isolation may be more strongly associated with depression for boys than girls. Larson et al (1990) account for these findings by suggesting that depressed boys' tendency to externalise depressive symptoms may lead to their rejection by peers.

In their study of variables that may protect or exacerbate the manifestation of depression in adolescents (13-16 years), Friedrich, et al (1988; discussed previously) reported that there was a difference between male and female adolescents in regard to the relation between social support and depression. Friedrich et al (1988) assessed depressive symptoms with the short form of the BDI. In addition, adolesecents completed the Family Environment Scale (Moos & Moos, 1981), the Life Stress Index for Adolescents (Coddington, 1972) and the Childhood Social Network Questionnaire (Chan & Perry, 1981). Friedrich et al (1988) reported that 63% of the sample scored in the nondepressed range, as measured by the BDI. There were no significant gender differences in mean depression scores.

Friedrich et al (1988) further reported that, although there was no gender difference in the average level of social support, there was an absence of a relation between depression and peers' social support in depressed boys. There was a relation between family support and depression for boys. In contrast, depressed girls reported less satisfaction with peers' social support and felt less family support. Consistent with Slavin et al's (1990) research suggesting that the perceived quality of peer social support is important factor associated with depression in females, but not males. Friedrich et al (1988) also reported, that life stress appeared to be more critical for boys and FES-cohesion is more critical for girls. Freidrich et al argue that adolescent boys may be more effected by stressful life events than adolescent girls, or may have fewer resources, such as peers' social support to buffer the impact. A caveat to these finding is that this study is correlational, consequently it does not allow the determination of cause and effect. The results of this study do not account for why most other studies find that girls report more depressive symptoms than boys. It is possible that the small sample of depressed adolescents in this study may have influenced the results.

Koenig, Isaacs, & Schawartz (1994) conducted a study to examine the relation between depression, loneliness and gender. They point out that loneliness and depression have been shown to be highly correlated in a number of studies (Russell, Peplau, & Cutrona, 1980; Russell, Peplau, & Ferguson, 1978; Weeks, Michela, Peplau, & Bragg, 1980; Young, 1982 cited in Koenig et al 1994). Koenig et al (1994) also cite a number of studies employing loneliness questionnaires which indicate that when gender differences in loneliness emerge males often report themselves to be lonelier than females (e.g. Avery, 1982; Booth, Ward, Mendelson, & Erbaugh, 1961; Davies & Franzoi, 1986; Page, 1990; cited in Koenig et al, 1994). Subjects in Koenig et al's (1994) study were 397 (152 males and 245 females) school students who were part of a larger research study examining depression vulnerability in adolescents. Depressive symptoms were measured with the BDI. Scores between 9-15 were classified as mildly depressed, 16-23 moderately depression and 24 plus severely depressed. The Response Style Questionnaire (RSQ; Nolen-Hoeksema, et al., 1993) was used to assess how an adolescent typically copes with feelings of depression. The Revised UCLA Loneliness Scale (R-ULS; Russell, et al., 1980) was used to assess satisfaction with social relationships. The Weinberger Adjustment Inventory -Denial of Distress Scale (WAI-DD; Weinberger & Schwartz, 1990) was used to measure the denial of distress.

Koenig et al (1994) found that, overall, girls reported significantly more depression than boys, however, there was no significant difference in loneliness. They also found interesting relations between severity of depression and loneliness scores. No gender differences in loneliness were found for the nondepressed group, nor the severely depressed group. For boys, not girls, mild depression was associated with as much loneliness as moderately high depression. In addition, mildly depressed boys were significantly lonelier than mildly depressed girls. Koenig et al (1994) noted that the inconsistent relationship among mildly depressed adolescents may be due to the large number of mildly depressed females in their sample. Sixty-five percent of depressed females were mildly depressed, as opposed to 59% of depressed boys who were classified as mildly depressed. Koenig et al (1994) concluded, however, that their data are consistent with other research suggesting that the "correlates and psychological processes associated with loneliness may be different for females and males". Koenig et al (1994) also reported that girls in their study, were more likely than boys, to report spending time with other people when they felt dysphoric. They concluded that it may be social interaction per se which accounts for the fact that females perceive more social support but report more depression. That is, social interaction may decrease loneliness without necessarily negating depression. As Koenig et al (1994) also noted, the feature most relevant to depression may be what one actually does while interacting with others. Rumination, as described by Nolen-Hoeskema (1990), for example, may occur whether one is alone or with friends.

Kenny, Moilanen, Lomax and Brabeck (1993) examined the psychological processes which have been hypothesised to mediate the relation between parental attachment, view of self and the experience of depression. Kenny et al (1993) noted that recent theorists have suggested that girls develop stronger attachments to mothers in infancy, than do boys. It is further suggested that because of the different experiences of being mothered and socialisation into feminine roles, females develop a self defined by relationships to others and characterised by greater concern for caring about and maintaining relationships (Gilligan & Wiggins, 1988; Jordan, Kaplan, Miller, Stiver, & Surrey, 1991). As discussed above, this greater social connectedness has been hypothesised to be both an advantage and a disadvantage to females psychological well being. Participants in Kenny et al (1993) study were 207 (n= 115 boys; n= 92 girls) eighth grade school children (13 years). Children were assessed in autumn of 1990 and

again in autumn of 1991. Attachment was measured with the Parental Attachment Questionnaire (PAQ; Kenny, 1987), view of self was measured with the Self-Perception Profile for Adolescents (SPPA; Harter, 1988) and depressive symptomatology was assessed with the CDI.

In regard to gender differences, Kenny et al (1993) reported that girls reported more depressive symptoms and lower self-worth than boys, however, they did not find gender differences on the attachment measures. They interpreted these latter findings to indicate that both boys and girls perceived the affective quality of their parental relationships as positive, their parents as encouraging their independence to a similar degree and perceived their parents as similarly available as sources of support. Kenny et al (1993) reported that, although both positive, the magnitude of the relationship between attachment security and self were significantly greater for boys than girls. In addition, the magnitude of the negative relationship between attachment security and depressive symptoms was stronger for boys. Kenny et al (1993) argued that these findings indicate the possibility that healthy identity development for boys is achieved through greater parental attachment. Interpretation of the results of this study are limited in that only one measure of depressive symptomatology was utilised. In addition, all measures in this study were self-report, and thus, do not necessarily provide an objective report of the variables measured. Kenny et al (1993) stated, for example, that (Bowlby, 1980) has noted that defensive processes may distort awareness and memory of parental rejection. Finding an association between parental attachments, view of self and depressive symptomatology does not necessarily mean that this relationship is causal. It is equally plausible that depressed mood may have contributed to negative cognitive appraisals of the self and parental relationships. Finally, there were markedly more females than males in this study, which may have also biased the results.

Peterson, et al (1991; discussed previously) included an analysis of the mediating effects of closeness to best friends and each parent in their study of the depressed affect over early and middle adolescence. These researchers reported that while parent closeness moderated the effects of changes in adolescent life, intimate friendship did not. Thus suggesting that any protective effects of intimate relationships are not generalised, but are specific to adolescent-parent relationships. Peterson et al (1991) reported no significant gender difference in the relation between social support and early adolescent changes.

(3) Summary

Females' orientation toward "care" and "connection" has been hypothesised by some to be a source of strength and self-esteem for females (Surrey, 1991) while others have suggested that it is a factor which increases females' risk for depression, particularly when interpersonal relationships are dissatisfying (McGrath, et al., 1990) and as a source of dependency and passivity associated with depression (Gjerde & Block, 1991). The research examining the relation between social support, gender and depression is sparse and the results inconsistent. Thus, it is impossible to evaluate any of these hypotheses adequately. While two studies reported that there was no relation between depression and peers social support for males, whereas there was for females (Slavin et al, 1990; Freidrich et al 1988), two other studies reported that depressed males tend to report more peer social isolation and loneliness than depressed females (Larson et al, 1990; Koenig et al, 1994). One study reported finding no significant gender difference at all (Peterson et al, 1991). Methodological differences across studies further contribute to the difficulty of interpreting these findings. Despite this caveat, there is limited evidence to support the notion that, for females, social support may present a buffer against depression, at least in regard to emotional support (Slavin et al, 1990). This finding does not necessarily exclude the theory that females greater social connectedness is also a disadvantage for females. On the one hand, it is possible that females orientation toward interpersonal relations may result in more value being placed on both nonfamilial and familial social resources, which, when perceived as positive, may act as a buffer against stress and depression. On the other hand, females may also be more effected by fluctuations in the quantity and quality of such social support, which alone, or in combination with, the negative aspects of self-consciousness, which greater social connectedness brings, may result in vulnerability to depression. This hypothesis remains to be tested. No studies to date, have specifically investigated the relation between social support, gender and depression in preadolescent children.

The finding that females often experience more social support than males is difficult to reconcile with the fact that females report more depressive symptoms than males after puberty. Koenig et al (1994) have suggested that it may be social interaction per se which accounts for this paradox. Koenig et al (1994) have argued that the feature most relevant to

depression may be what one actually does while interacting with others. Rumination, for example, as described by Nolen-Hoeskema (1990) may occur whether one is alone or with friends. In a review of the literature in this area with adults, (Turner, 1994) has suggested that women experience more support and more depression, in part, because of the duality inherent in their involvement in social relationships. More specifically, Turner et al (1994) found in their review that although women experience more social support than men, the quality and quantity of women's relationships makes them more vulnerable to the negative and stressful aspects of relationships as well. It would be informative to investigate these dimensions and their connection in the social relationships of adolescents.

(4) Models

The existing research does not enable an evaluation of either model 1 or 2. No research has been conducted to ascertain whether gender differences exist in the relation between social support and depression in preadolescent children. In addition, due to the lack of research, it is not known whether gender differences in social support, if they exist, become more prevalent in adolescent females than males, as model 1 and 2 would predict. Similarly, there is insufficient research to evaluate model 3. As gender variations in social support are influenced by gender role socialisation, a process which begins at birth, it is probable that some gender differences may be evident in young children. It is possible that, on one hand, these early differences may act as risk factors for depression, for example increasing girls vulnerability to negative interpersonal events, increasing self-consciousness and negative self-evaluations, which may then interact with the increased challenges of early adolescence. Thus, resulting in females increased vulnerability to depression. On the other hand, girls social network may act as a buffer or mediating factor against stress and/or depression. Overall, however, more research is needed to investigate these hypotheses. Currently, too little is known about the role gender differences in social support have in the emergence of gender differences in depression at adolescence.

SECTION 6

METHODOLOGY PROBLEMS AND CONCLUSION

CHAPTER 11

METHODOLOGY PROBLEMS

A number of methodological problems make any conclusions drawn from the literature tentative. The following chapter is a summary of common methodological problems which plague the research in this area.

1. DESIGN

• Most studies are designed to examine whether or not there is an association between specific variables, gender and depression. Cross sectional studies, however, do not address the extent to which depression related variables precede gender differences in depression and function as risk factors for the future occurrence of depressive symptomatology.

• Few studies include sampling across both child and adolescent years. Longitudinal studies are needed to examine variables which may be implicated in divergent patterns between preadolescence and adolescence. Such studies need to begin in childhood, long before the emergence of gender differences, and follow girls and boys through and beyond, the adolescent years. Despite the fact that gender differences emerge in adolescence, this does not necessarily imply that the causal factors are found at this time. In fact, it is the conclusion of this paper, that sufficient research indicates that many of the risk factors pertinent to the emergence of gender differences in depression are evident in preadolescence. This raises questions as to why the majority of investigators, to date, have searched for the origin of gender differences in depression in adolescents.

• Rather than univariate studies which focus on one specific variable thought to be associated with the emergence of gender differences in depression, multivariate studies are needed which can take into account the complex relations between biological, psychological, and social factors. It is very unlikely than any one specific causal variable will be responsible for gender differences in depression. In addition, more consideration needs to be given to the comparability of constructs over the childhood and

adolescent years. This would decrease the fragmentation which currently exists between the research with children and adolescents.

• Few studies have been designed to directly examine gender differences in depressive symptoms, rather the majority of researchers have included a gender analysis as part of a larger study. Investigation of gender differences in depression needs to be bought to the forefront of research of depression in children and adolescents, as opposed to being marginalised. If the predominance of depressive symptoms in girls at adolescence can be understood, perhaps it can be prevented. Moreover, a greater understanding of gender differences is likely to contribute significantly to our knowledge of depression in general.

2. MEASUREMENT

Overall, not enough attention has been paid to the measurement of depressive symptomatology or related constructs. A number of problems pertaining to the assessment of depressive symptoms and depressive disorders in children and adolescents need to be considered. As these have been discussed previously, they will not be repeated here.

• Many researchers do not explicitly state whether they are measuring depressed affect, depressive symptoms or depressive disorders. Nor are researchers assumptions about the relation between depressive symptoms and clinically severe depression made explicit. i.e. is it assumed that different levels of depressive phenomena represent different poles on the same continuum, or are they assumed to be qualitatively different. Inconsistency and lack of clarity in identifying the level of depressive phenomena being measured has contributed markedly to the disparate research findings in this area.

• Further research needs to investigate the effect gender may have on instruments developed to measure depressive symptomatology and related variables. Although discussed previously, this issue warrants reiteration. There is substantial evidence to suggest that the particular measure of depressive symptomatology, commonly used in the research in this area, have an effect on whether gender differences are found or not. More specifically, the research indicates that males and females tend to express depressive symptoms stereotypically, consequently, if most of the items of

an inventory tap stereotypically feminine symptoms of depression, then it is likely that females will be identified as more severely, or more frequently depressed. It has been argued that self-report inventories of depressive symptoms, such as the RADS, BDI and the CES-D are more characteristic of depression in females, and consequently, are not sensitive enough to the male depressive experience. Moreover, methods of symptoms identification have the potential to produce a gender bias in the way children and adolescents respond to items. In order to maximise sensitivity and specificity, different criteria may be needed to interpret scores for males and females. Future research needs to focus more intently on the relation between gender and specific items on instruments. Until this occurs research investigating the emergence of gender differences in depression will be hindered.

• The majority of studies have relied solely on the self-report of depressive symptoms and other variables thought to be associated with the emergence of gender differences. Consequently, they have not controlled for possibility of self-report biases. Obtaining information from clinical interviews and/or significant others would help counteract this problem and contribute to the validity of the assessment process. In addition, studies typically only use one instrument to measure depression and other related variables. Furthermore, if the same measure is used across studies, different cut-off scores are often used to define depressed from nondepressed subjects, and to categorise levels of depressive symptomatology. As a consequence, comparisons across studies are made difficult and generalisations are limited. Self-report inventories provide no information in regard to the temporal course of depressive symptoms. It is possible that self-report measures at one point in time may reflect a current state that does not necessarily reflect stable behavioural pattern or frequency of behaviour. In sum, future studies need to include multiple measures which gather information from others (e.g. clinician interview, parents, peers) as well as self-report, and include assessment at more than one point in time, in order to provide more objective, reliable and valid assessment of the variables in question.

• It is not clear from much of the research whether an association between gender differences and depressive symptomatology is specific to depression, or applies equally to other psychological symptoms or disorders. Future research needs to include additional measures of depression and also needs to consider additional areas of symptomatology. Researchers need to

employ psychiatric control groups, as well as 'normal' groups, so that it can be established as to whether gender differences found are specific to depression or are general to all psychiatric disorders.

• As comorbidity is the rule, rather than the exception in children and adolescents with depression, more attention needs to be paid associations between comorbid disorders and gender. Future research needs to investigate how comorbid disorders relate to the clinical presentation of depressed children and adolescents. Their presence may be an important factor in accounting for the differential gender ratio of depression.

• There needs to be more consistency across studies in the measures utilised to assess depressive symptoms and related constructs. Without such consistency, comparisons across studies becomes extremely difficult, if not impossible. Moreover, some studies use measures which have questionable or unproven reliability and validity, particularly for use in child or adolescent samples. All of these factors considerably limit interpretations which can be drawn from the research results.

• Most studies examining gender differences in depression have considered depression in terms of mean differences between groups. Attention to mean differences alone, however, may not provide complete information about the relation between gender and depression. As Koenig, Isaacs, & Schawartz (1994) have discussed, if a variable of interest is not normally distributed in one group, then drawing conclusions on the basis of differences in means alone could be misleading. Most studies reporting that females are more depressed than males, have typically relied on this type of comparison, however, there is evidence that the relationship between gender and depression in not linear and may vary according to the level of depressive symptomatology. Future research needs to pay more attention to potential gender differences in distributions of depression scores. This methodological issue may account for may of the inconsistent reports of gender differences in prevalence and severity of depression.

3. SAMPLE

• All studies in the general population have employed school children, and therefore, have excluded children and adolescents who receive their education out of the main stream institutions, those who have dropped out of school and those with poor attendance. Consequently, these samples are likely to underrepresent young people with depressive symptoms or disorders. Furthermore, subjects typically employed in studies in this area are white, lower-middle to middle class. In addition, researchers do not always employ adequate sample sizes or equal proportions of males and females. In sum, researchers need to employ broader random sampling techniques, so that children and adolescents who do not attend school, and those from different racial and socio-economic backgrounds are also represented.

• Research investigating the emergence of gender differences in depression have largely focused on depressive symptomatology. Future research needs to ascertain whether the same factors also lead to the emergence of gender differences in depressive disorders. In addition, as most of the research in this area has focused on young people from community samples, future epidemiological research need to investigate gender differences in clinical samples of children and adolescents.

• The majority of studies do not take sufficient account of age, developmental level or stage and pubertal differences among young people. Rather, children and adolescents of broad age ranges, developmental levels and pubertal status are grouped together and results are discussed as they pertain to the group as a whole. As a consequence, any associations between these factors and depressive symptomatology are confounded. There is evidence to indicate that there are developmental, age related and gender differences in the expression of depressive symptomatology which need to be considered. There is also substantial evidence to suggest that gender differences associated with puberty may be significantly related to the emergence of gender differences in depression. Future studies need to take account of pubertal stage, age, gender differences and level of depression in their analysis, so that important differences and associations between these variables are not obscured.

• Research also needs to be focused on investigating gender differences in depressive symptoms and depressive disorders in young children. At present very little is known about depression, never mind gender differences in depression, in children younger than about 6-8 years.

Overall, in order to advance psychological knowledge, researchers need to bring increased methodological rigour and conceptual clarity to bear on investigations of the emergence of gender differences in depression.

CHAPTER 12

CONCLUSION: EVALUATION OF MODELS

1. INTRODUCTION

None of the studies discussed in this paper have directly tested any of the models which have been proposed to account for the emergence of gender differences in depressive symptoms in adolescents. Moreover, few of the existing studies enable a comprehensive evaluation of each model, let alone a comparison of the models with each other. Rather, researchers have looked at specific variables thought to be associated with the emergence of gender differences in depression, without the benefit of a theoretical framework. The result is that the literature in this area is unfocused, fragmented and largely incomparable. The following section summarises the evidence relevant to each model.

2. MODEL 1

Model 1 posits that the same risk factors may lead to depression in both males and females. During preadolescence these factors are equivalent for the sexes, which accounts for the absence of gender differences in the prevalence of depressive symptoms. At early adolescence, however, these risk factors become more prevalent for females, thereby resulting in the emergence of gender differences in depression.

Stressful life events

There is some evidence that stressful life events often precede depression for males and females, as would be predicted by model 1. Unfortunately, the research is inconsistent as to whether there is greater strength of relation between stressful life events and depressive symptoms in preadolescent females, than males. In accord with model 1, females report a greater number of stressful life events, which have been directly related to increased depressive symptomatology.

Personality

There is no evidence to indicate that gender differences in personality dimensions thought to be associated with depression in females, increase during adolescence, as model 1 would predict. There is limited support for the model 1 postulate that the same personality dimensions are associated with depression in males and females.

Sex role stereotypes

There is no evidence to indicate that girls (or boys) conform more to sex role stereotypes at adolescence as would be posited by model 1.

Body image

The research examining the relation between body image and depression provides some support for model 1. Boys and girls who are dissatisfied with their bodies are more vulnerable to depression. At adolescence, however, girls are more likely to be dissatisfied with their bodies than boys, as predicted by model 1, thereby leaving them more at risk to depression.

Self-evaluation

In accord with model 1, negative self-evaluation has been found to be correlated with depressive symptoms in males and females. Contrary to model 1, however, gender differences in self-evaluation are evident in preadolescents, with girls being more likely to exhibit heightened self-consciousness and negative self-evaluation. Consequently, gender differences in these two constructs alone, cannot account for emergence of gender differences in depression.

Social Support

As no research has investigated the relation between social support, gender and depressive symptomatology in preadolescent children, an evaluation of model 1 is not possible.

3. MODEL 2

Model 2 posits that the risk factors associated with depression are different for males and females. During preadolescence these risk factors, although different, are equivalent for the sexes, thus, there is no gender difference in the prevalence of depression. It is hypothesised that, at early

adolescence, the risk factors associated with depression for girls increases, compared to the risk factors for boys, thus, resulting in the emergence of gender differences in depression.

Stressful life events

Although, in accord with model 2, there is evidence that stressful life events increase for females at adolescence, there is also evidence that stressful life events are associated with depression for both males and females, contrary to what model 2 would predict.

Personality

As was the case for model 1, there is no support for the model 2 postulate, that gender differences in personality dimensions thought to be associated with depression in females, increase during adolescence. Furthermore, it is not clear whether the gender differences in personality dimensions apparent in preadolescence are associated with depression only for females, as would be predicted by model 2. Rather, there is some weak evidence that personality dimensions associated with depression, although more common in females, are associated with depression for both sexes.

Sex role

Contrary to the proposal of model 2, there is evidence that some sex role traits, such as low instrumentality, are associated with gender differences in both sexes. Moreover, there is no evidence that females conform more to sex role stereotypes at adolescence.

Body image

Dissatisfaction with body image appears to be associated with depression for both of the sexes, thereby contradicting model 2.

Self-evaluation

As with model 1, the fact that gender differences in self-evaluation are evident in preadolescence contradicts model 2. Moreover, negative self-evaluation is correlated with depressive symptoms in males and females, which also stands in direct contrast to model 2.

Social support

As no research has investigated the relation between social support, gender and depressive symptomatology in preadolescent children an evaluation of model 2 is not possible.

4. MODEL 3

Overall, it is concluded that model 3 provides a better account of the research to date and provides a more fruitful theoretical framework for further investigation of the emergence of gender differences in depression.

Model 3, which is similar to the diathesis-stress model of depression, hypothesises that the risk factors associated with depression are the same for preadolescent males and females, however, these risk factors are more common in preadolescent females. As a consequence of this, females are more at risk for developing depression than males. It is not until girls are faced with the challenges of early adolescence that depression emerges, thereby accounting for the predominance of depressed females evident among adolescents.

Preadolescent females appear to have a number of characteristics or risk factors which leave them vulnerable to developing depression when faced with the challenges of early adolescence. The development of these gender differences in risk factors can be explained, largely, as the results of differential socialisation of the sexes and gender stereotyping. Gender stereotyping, for example, results in boys being encouraged to rely upon assertive and aggressive behaviours to obtain life goals, whereas girls are taught to be diffident, self-evaluating and self-effacing. A consequence of this is that females are more likely to underestimate, or negatively evaluate their competence, and make negative self-evaluations. Both of these factors have been correlated with increased depressive symptoms in females. (Leadbeater, Blatt, & Quinlan, 1995) has suggested that the interaction of competence and depression in children may be a feed-back loop in which performance difficulties contribute to depression, which in turn, reinforces feelings of incompetence and inadequacy. Similarly, Cole et al (1990) has suggested that, as a result of gender stereotyping, preadolescent girls may manifest a variety of depressogenic cognitive biases, including a tendency to underestimate personal competencies and to attribute failure to lack of ability.

Gender socialisation also results in females entering adolescence with more social relational concerns than males. On the one hand, this may buffer or mediate females vulnerability to depression, however, on the other hand, there is evidence that females greater social connectedness may

result in females being more vulnerable to negative interpersonal events and result in heightened self-consciousness. Heightened self-consciousness has been associated with self-criticism, negative self-evaluation, negative affect and behavioural withdrawal. Females greater social connectedness may account for the fact that the self-evaluation of preadolescent females, compared to males, tends to be more related to external factors, such as perceived physical attractiveness and the opinions or evaluations of others, rather than intrinsic factors. The research indicates that both of these factors have been associated with increased depressive symptomatology in females. The research also shows evidence that preadolescent girls are more likely to evaluate their bodies negatively than preadolescent boys. Thus, it is possible, that when body attractiveness and competence become more salient in adolescence, the basis already exists for females to be less satisfied with their bodies, and subsequently contribute a lowered self-esteem and depression.

Challenges

In general, it is hypothesised that socialisation practices tend to extend the range of available experiences for males, and restrict the range of potential experiences for females. As a consequence, the socialisation of girls diminishes the probability that they will develop a sense of competence and self-efficacy. As a result females enter early adolescence with either a precarious, or perhaps an already low sense of control, self-efficacy and self-esteem. These risk factors then interact with the challenges of early adolescence, resulting in the predominance of depressed females.

The challenges faced by both males and females in early adolescence include, physical, psychological and social changes which are associated with puberty. This is not to suggest that adolescence is a 'time of turmoil', but to acknowledge that it is clearly a time of change and difficulty for some adolescents.

There is some research to suggest that many of the challenges of adolescence are more likely to have a negative effect on females, than males. In regard to puberty, for example, girls are more likely to experience early or late pubertal onset negatively, whereas, boys typically only perceive late pubertal onset as negative. Although shown to be weakly correlated with depressive symptoms in females, combined with other risk factors, hormonal changes may also contribute to females increased vulnerability.

The physical changes of puberty are also more likely to be evaluated negatively by females, whereas males perceive the changes to their bodies as positive. These perspectives reflect the view of society at large. For males, the changes associated with puberty tend to elicit social advantage (e.g. athletic prowess, leadership roles), in contrast, for females, physical maturation carries with it social disadvantages (e.g. sexualised responses). The research indicates that body image is intimately tied to self-esteem and well being, particularly for females, which may lead to depressive symptoms in some girls.

Puberty or early adolescence is also a time of significant psychological and social challenges for adolescents. In early adolescence, thought becomes more abstract, logical and idealistic. In addition, adolescents become more capable of metacognitions, and consequently, have a greater capacity for introspection. Psychosocial challenges include the establishment of autonomy, psychosocial and psychosexual development and a change in orientation toward future goals. There are also substantial changes in the environment of children entering adolescence. These include changing schools and adapting to new structures, new and more difficult courses and unfamiliar peers. There is research to suggest that this period may be more difficult for girls than boys because girls tend to be less satisfied with the physical changes of puberty and because puberty typically occurs earlier in girls.

According to model 3, as preadolescent females reach adolescence already at risk for depression, they do not need to experience more challenges than males during early adolescence in order to become more prone to depression. There is evidence, however, that females do in fact report experiencing more physical, psychological and social challenges at adolescence. Research indicates that, in general, adolescents who face stressful life events at the same time as their bodies are undergoing physical changes are more at risk of depression than those who face one challenge at a time. There is substantial evidence to indicate that the simultaneous experiencing of life changes is more likely to occur for females, than males. This transpires because females typically reach puberty approximately 2 years before males, thus they are more likely to experience these changes simultaneously, further increasing their risk of developing depression. Moreover, there is some longitudinal evidence to suggest that gender differences in depression may be directly related to changes experienced in early adolescence. There is also evidence to suggest that successive stressors

have more effect on the self-esteem of adolescent females, than males. In sum, females report experiencing more stressful life events, which are more likely to occur simultaneously and therefore have more effect on females psychological well being, than males.

Finally, there is evidence that adolescent girls are more likely to respond to depressive symptoms with a ruminative coping style. This type of coping style has been found to be associated with longer, and perhaps more severe, depressive episodes than individuals with a distracting response style. Gender socialisation and gender stereotyping are also likely explanations for the development of females more ruminative coping style. Nolen-Hoeksema (1990) for example, suggests that females style of responding to depressive symptomatology is part of the feminine stereotype; being inactive and emotional. In contrast, males more distracting style of responding is part of the masculine stereotype; being active and controlling. These styles of responding are selectively reinforced by parents and the wider society.

Currently, it is not clear when a predominately ruminative style of responding in females emerges. This may be evident before adolescence and therefore, as Nolen-Hoeksema et al (1994) suggests, girls may enter early adolescence with a ruminative style of coping which increases their vulnerability to depression, particularly when faced with the challenges of early adolescence. An alternative hypothesis is that difficulty or failure to cope with stressors may reinforce females already developed sense of low self-efficacy and control, thereby resulting in depression and a more ruminative coping style. Thus, a ruminative coping style may be part of, or a consequence of depression, rather than a cause.

In accord with model 3, Nolen-Hoeksema (1994) has proposed that the emergence of gender differences in depression are due to two factors; (a) girls entering early adolescence with a style of responding to frustration and distress that is less efficacious and action-oriented than boys and, (b) girls begin to face certain uncontrollable stressors in early adolescence to a greater extent that boys. It is argued here that Nolen-Hoeksema et al's (1994) theory only provides a partial account of why gender differences in depression emerge. As discussed above, preadolescent females are subject to a number of other risk factors, including ruminative coping style, which leave them vulnerable to depression. Moreover, the interaction of these risk factors

with the challenges of adolescence are far more complex than females simply experiencing stressors to a 'greater extent' than males.

The overall outcome is that risk factors in preadolescent females interact with the challenges of puberty, thereby reinforcing females already existing negative self-schema which is characterised by a sense of low self-esteem and self-efficacy. Cognitive-behavioural theorists have hypothesised that these in turn lead to feelings of low control, pessimism, hopelessness and depression (Bandura, 1977; Abramson, Seligman, & Teasdale, 1978).

(1) Why some girls become depressed and others do not

This model can also account for individual differences between girls in the emergence of gender differences in depression. Preadolescent girls may vary as to the number and degree of risk factors they carry, and in the degree and amount of challenges they face in early adolescence. For example, differences in the timing of puberty, personality dimensions and differences in the extent to which gender socialisation and gender stereotypes are internalised, may all contribute differentially to individual vulnerabilities. In addition, the number, effect and timing of stressors that adolescent girls are faced with will vary. Social support may be a mediating factor which determines whether some girls get depressed and others do not. Positive or adequate social support, for example, may provide a buffer against depression, while negative or deficits in social resources may contribute to the risk of depression. Thus, it is suggested that if sufficient vulnerabilities line up, which is more likely to occur with some females, then depressive symptomatology are likely to manifest themselves.

(2) Adulthood

The epidemiological research indicates that the gender difference in the depression ratio continues into adulthood. This may be partially explained by the fact that many of the risk factors, commonly found in preadolescent females, continue to be risk factors for females into adulthood. In addition, there is substantial evidence to indicate that once an adolescent has experienced a depressive episode, they may continue to exhibit emotional and behavioural problems, and they are at increased risk of developing a further depressive episode or depressive disorder (Lewinsohn, Roberts, Seeley, Rhode, Gotlib, & Hops, 1994; McCauley, Myers, Mitchell, Calderon, Schloredt, & Treder, 1993; Feehan, McGee, & Williams, 1993; McGee & Williams, 1988). It is hypothesised that these factors play a large part in

insuring the predominance of depression in females. Overall, however, the possible long-term effects of the early childhood risk factors need to be addressed so as to understand why gender differences continue into adulthood.

Model 3, while providing the best account of the research to date, awaits further evaluation. Overall, too little attention has be paid to theoretical accounts of the association between gender and depression. Most research to date has focused on investigating specific variables thought to be associated with the emergence of gender differences in depression, however, it is probable that the relation between gender and depression is complex and not likely to be accounted for by any one specific variable. As Nolen-Hoeksema et al (1994) has also noted, our knowledge and understanding of the relation between gender and depression would be more productively advanced if researchers developed and tested models of how gender differences in depression emerge, such as those described here, rather than continuing research which is largely devoid of a guiding theoretical framework.

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APPENDICES

Key Words Used For Search Of Data-Bases And OPAC For Articles And Books Investigating Gender Differences In Depression In Children And Adolescence

Sex differences and depression and children*
Sex differences and depressive symptoms and children*
Sex differences and affective disorders and children*

Sex differences and depression and adolescents*
Sex differences and depressive symptoms and adolescents*
Sex differences and affective disorders and adolescents*

Gender differences and depression and children*
Gender differences and depressive symptoms and children*
Gender differences and affective disorders and children*

Gender differences and depression and adolescents*
Gender differences and depressive symptoms and adolescents*
Gender differences and affective disorders and adolescents*

Epidemiology and depression and children*
Epidemiology and depressive symptoms and children*
Epidemiology and depressive disorders and children*
Epidemiology and affective disorders and children*

Epidemiology and depression and adolescents*
Epidemiology and depressive symptoms and adolescents*
Epidemiology and depressive disorders and adolescents*
Epidemiology and affective disorders and adolescents*

Gender differences and theory and depression
Gender differences and theory and depressive symptoms
Gender differences and theory and affective disorder*